

Darne Park & Park all
plants of the Darne Park
mesocarp

5146 1/2 ft. in the woodline
base 35 ft. above woodline
Charlevoix crescent

the book belongs to
B. Shimek

Iowa City, Ia

It can be of no
possible use to you
but he wants it, and
will reward you
suitably if you return
it.

B. Shimek

Dr. Amyot
the author
of "Fauna of
North America"

Aug. 21, 1909

Left Orleans at 6 am.
for Libby.

Spent night at London
Hotel. Aug. 22

Left by way of the O'meara
(C. & N.W.) at 4:30 AM.
Stopped at Sono City for
breakfast, and reached
Missouri Valley at about
10 am.

Rained some. Stopped at
the Meadow.

After dinner drove out
to Cox, and took boat
on Potts Co. lake for
fin mackerel with which
I will get later (?)

Wrote at 106, & then drove
to ridge No. of Woodley &
collected plants on S. end

and at sta. 1.

met a couple of young men student of Ohio State U., who are in greatest singing at Chautauqua.

They commented air their views on the geological formations, and I guess they were a little surprised to find that the shabby fellow they encounter knew anything about it. Received my suitcase at 9:30, & left for Cedar Rapids at 10:30 P.M.

Aug. 23

arrived at Cedar Rapids at 5:25 A.M. & left for Iowa City at 6 A.M.

Aug. 25-1909 (Wes)

Left Iowa City at 9:30

Pra. & Cedar Rapids at 11:35

Aug. 26 1909 (Th.)

Reached Mo. Valley at 6:15 A.M. down my basket & took breakfast.

Left for Logan at 8:30 A.M. with Mr. Dr. Peckenspanish. Went to his place. He has exposed 9 - 12 ft. of sand, varying in color from reddish, & rich iron bands & streaks.

Below this is a layer of bluish sand, up to 1 foot thick & below the sand in this he found near its upper part a lot of a few shale & fine

of ribs. The chip
is probably from pachyderm
but ribs are too small
for that.

We dug into gravel &
found it only about a
foot thick. It rests on
Mississ. Limestone.
The light blue soil rests
right on gravel.

This is very typical
of limestone.

Elephas | columbi

9 plates in 3.84 in. from
center of ridge & center
thickness with
2.86 in.

6.9 in
6
8
in.

Side view

This tooth was found in gravel
layer in quarry off. Logan
by Mr. Lester Adams, when
Illinois Central was being built.

A fragment of bone, - probably
part of scapula, - evidently of
a pachyderm, was found
with the above. It is flat
on round surface, & probably
not a big bone.

This may be *E. imparator*
Belongs to Thos. W. Adams.

Mr. St. right - (W. of town)

Mr. Adams - Hog creek

Upper part in the M.R.
Wasn't through cutted -

This was about 8-12 ft

Its lower part is dark
(black mud) in places, &
again lighter with iron
tubes in lower 6 ft.

In galleries there are streaks

& bands of gravel etc.

In this town we often
find,

creek is 12-14 ft wide

Winding, etc., all

like river banks
or places.

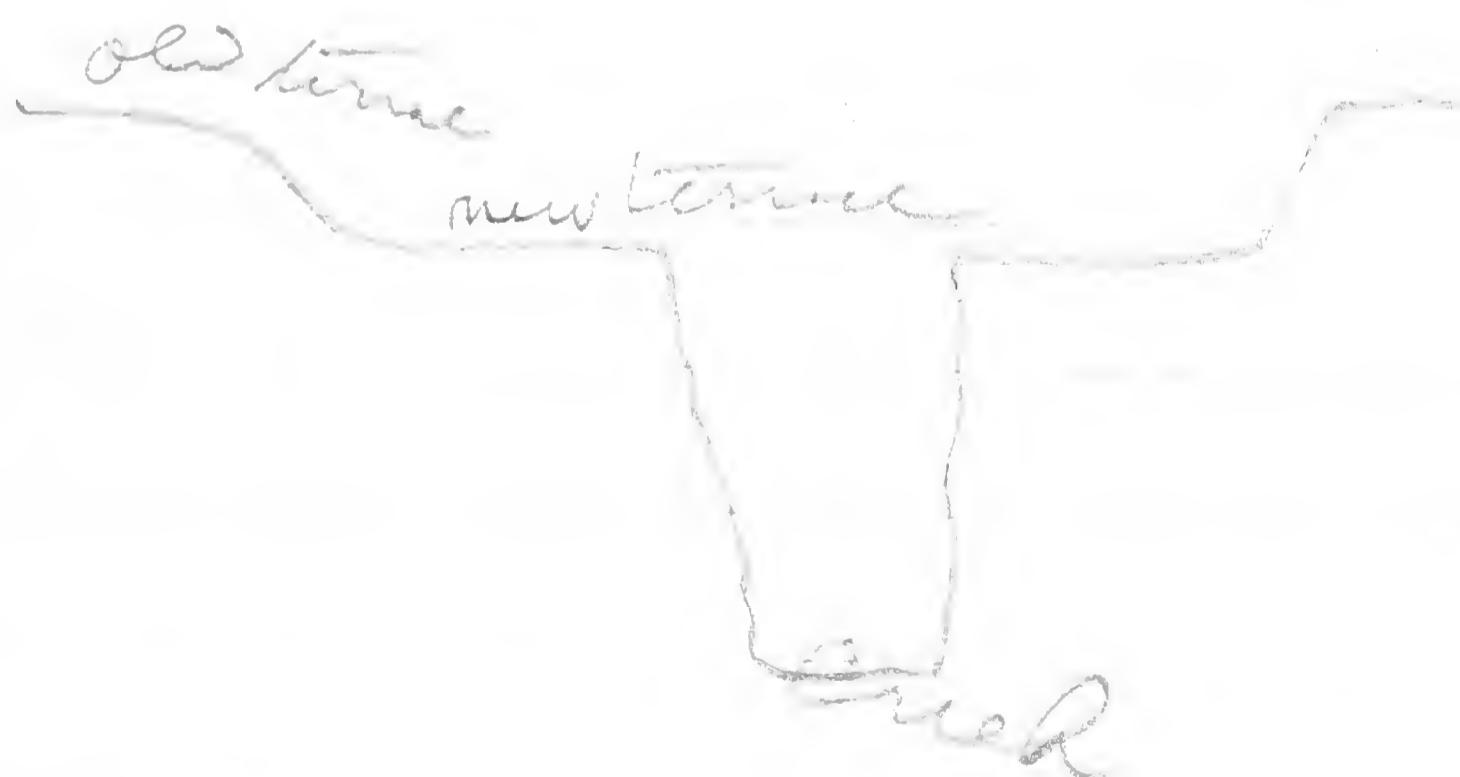
Many places
alluvial soil (see
chart.)

Buried with, presumably down
young, not much worn or
eroded - Measured 5 rings,
center to center - 2.26 in
This is shorter than other
both - more like young

There are irregular line
ridges.

The valley floor is made
of talus & mostly talus
terraces are streaked
(reflecting), also by the
down flow of from the
Mk - long and back
in some cases again
mostly at bottom.

This is Hog creek.
In several places the
creek has cut into a
deposit leaving terraces



After over and wide,
the creek had filled up

to new terrace level.

Left at 10:30 P.M. for McAllen

1909.

"

Aug. 27th (2d.)

Drove out to Main bridge
with Mr. Sniff.

Took photos & collected
plants on sand dunes.
A hot dry wind.

Pachers left at about
midnight for Ogallala, Neb.
Stephens ^{Aug. 28th 1909} at home, winter
quarters at Grand Island, &
left car in Rapid City
16³⁰ P.M. for Chicago.

Aug. 28 (sun.)

Rent car Chicago at 6.²⁵ am
& left for Milwaukee at
8 am. Reached Milwaukee at
noon. Went to Chas. Jimmy's for dinner.
Spoke in afternoon. Heard
lecturing of religious etc.,
antecedents, & was warmly
received.

Late at 10³⁰ P.M. for Elgin
by way of Green Bay,
Rented Chicago at 11.⁴⁵ P.M.
& put up at the Cos Cob Hotel.

1909

Aug. 30 (Mon)

Left at 6:45 for Durie

Park, Ind.

Collected plants in sand near

ditch

Lindernia

Solidago sempervirens
Altissima

Ceratodon

Panicum distichum
" " sand.

Oenothera biennis

Thlaspi arvense

Engelmannia pectinata

Salicornia europaea

Hibiscus laevis

Cyclotis " "

Salsola komarovii

Sphaeralcea occidentalis

Monarda fistulosa

Saxifrage

Ornitochilus leucophaeus?

Crescentia cujete

" capparis

Lespedeza capitata

Cyperus esculentus

Juncus acutus

Poa

Poa vaginata

Erophila (Alo)

Polygonum -

Bellardia viscidula

Zygophyllum ?

Palmerella -

Coreopsis diffusiflora

Thlaspi arvense

Scrophularia -

Asclepias tuberosa

Lithospermum -

Amorpha fruticosa

Mimulus

Tropaeolum majus

Centella asiatica

Poa " gracilis"

Tragopogon porrifolius

Lesq. sp.

Brachypodium sylvaticum

Equisetum arvense

Inga americana

Lithospermum

Polygonum

Astragalus glycyphyllos

Asclepias syriaca

Antennaria parviflora

50 Pedicularis canadensis

Ilex verticillata

Aster -

" " secundum

" " secundum

Gentiana villosa

Gentianella

Gentianella

Gentianella

Gentianella

Lepturus australis

Purshia microphylla

Kuhnia cristata

Lupinus perennis

Zygophyllum -

Trifolium pratense

Camassia esculenta

Lesq. sp.

Brachypodium sylvaticum

Gentianella

Gentianella

Potentilla

Ericameria pumila

Equisetum arvense

Inga americana

Lithospermum

Polygonum

Poa glauca

" glauca nitens

Gomphrena

" "

Cornus

" "

" " subcordata

Gomphrena

Stachys

Eriogonum

Prunus

Franseria

Desmodium

Poa glauca

Sedum acre

Dianthus barbatus

Vitis "

astoriae Thell.

Heuchera " lipp.

Kerria

Pyracantha coccinea

Quercus alba

Guinep

Pinus strobus

" taeda

Thelia anomala

Ceratonia siliqua

Heliotropium curassavicum

Borago officinalis

Panicum

13

The day was fine, somewhat windy.
York Gullwings - see opp page.

The Lawrence and Turner, - and
one hundred with first.

On one side of bark (on W. side
next to soil) is wet by rain
to wood.

The stems of *Cornus idahoensis*
are similar, broken gray on
one side, red smooth back
on S. side.

The gravel | vines spread on
sand, cattle man & soon the
lure is tried up.

This downward slope on
one side is due to the
course of time in heavy
weathering.

Plants - }.

15

short time

17

copied

1909

Aug. 31 (Tuesday)

Ran down Iowa City at 4:30 am.

No back, - Mr. Kessing helped carry my truck to running.

Left at 6:30 am. for North, without having been able to get the folks at home, - had the railroad switches, fix plants & rock.

Ran down Keokuk again 2 PM.

Went out to comfort S. of mine each

Burt Winter fit -

Drank well about 10+ ft
below water - saw 1 ground
all the way N. of RR.

Mr. Gable has fit S. of
truck.

S. of truck & E. all covered
Hawkeye Cenot & Hill Co. (At Home)

Left Chicago at 10 PM.

In the Winter pit last winter a bone was found - 2 ft long, & 2 in. across.

A man about 6 ft. (average) has been found in Gable's pit.

The Winter pit face

S. & S.E. side is about 12⁺ ft. of beautifully cross-bedded sand & fine gravelly with occasionally bands and layers of heavy silt - rather dense.

The fine sand closely contains pieces of limestone, etc.

I found a few in sand & one in silt. Some are broken & most entire. I find these shells mostly at

about 6 ft. above base. The measure of bank is from water in pit.

From E side I could see top of bedding. This is heavy sandy soil, more or less soft, especially where it lies

gravel & sand. This will latter not climb. This upper layer is 2-3 ft.

The top of sand is just about in level with the N. & S. R.R. to the south.

The winter pit is just N. of R.R. & 12 or 15 mts N. of wagon way, & half a dozen rods W. of one mile post along R.R.

It is probably 180 ft. long. These pits are not on general plain.

Left at 6:05 PM with
Joe for Clear Lake, to
meet Anna & Frank.

Spent night in cottage

Sept. 1 - Wed. 1909

A cloudy, disagreeable
day. Collected the oak
acorns & took photos
of beach of lake (photos
1 & 2).

In afternoon went
across lake to west
with Harry Shepherd in
Mark W. Gil's launch
"Hobie" to inspect
water plants in
island of Clear Lake
Name Portulaca oleracea

Found the most
common of all to be
Magniphylax.

Most common plants in
clear lake:
Magniphylax hirsutus
Pontederia cordata
" "
Carex
Polygonum avicinatum

Retired at nearly dark
& getting.

I was semi-night fish
with malaise from, etc
and had a few bites of
it.

Harry Montgomery & Gil
occupied cottage next to
ours. Spent time together

Sep. 2 - 1909 (Thu.)

Left with Ann & Frank
for Marion Co. It was
rainy & disagreeable.
At 1:45 Ann & Frank
left for home, & I
returned & stayed in
house all day.

Rained all day,
and I was still all
in.

Sep. 3 - 1909

Visited the Catlin sand pit
N. of Water street & just E. of
~~the~~ Central RR track.



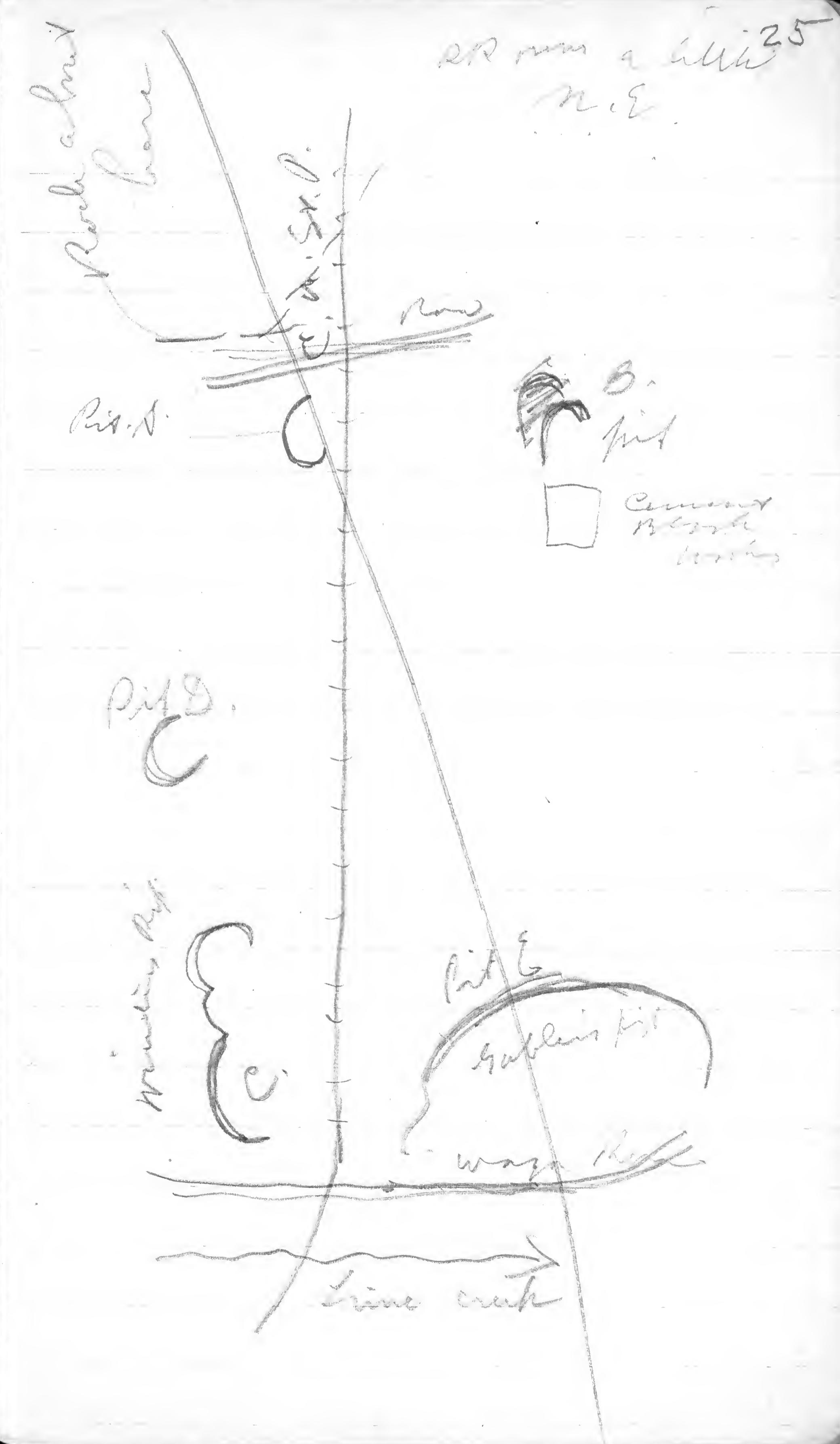
The sand pit is narrow &
not now in use. It is here
that part of Human jaw
with 3 or 4 teeth was found
about 20 yrs ago. It
was sent to Historical Socy
at Cedar Rapids (sent by
John Smith.)

The U pit cuts about
8-10 ft of gravel & sand,
mostly sand. Some marl

bedding & visible but
it is not as clean as
in Wapiti pit.

Down stream area in
the north just in fine
gravel - 7 specimens.

These pits are on a bench
nearly at a level with general
providence & the fine creek
several rods away is only
2 or 3 rods to the east.
The 2nd part of the
N. pit shows bands of
silt & then mostly
fine gravel.
It slopes down with
silt, sand & a few



Pit A. shows 6-7 ft.
5-6 ft coarse gravel
& small boulders
above, not clearly
separated, &
below that, sharply
defined, 1-3 ft of
fine sand, now or
less cross-bedded.

Visited the Huffman
pit - B.

It is 12-14 ft. to rock, &
all sand & gravel.
The upper layer, 2-4 ft
is again coarse gravel
pebbled in places
in sand, cross-bedded
with rocks of fine
gravel.

With glaciation in (3/4 mi.)
no doubt)

water appears everywhere
in lower part - in this
pit may - 6 or 8 ft. of top

Pit C

Very winter's pit not too
bad with Mr. Dr. There
seems to be no coarse gravel
on top here.

Pit D - S. Pit - Early W.

" H - same.

The central basin here is

depth 2

Pit E - taken at the
N. side a layer of coarse
& cross-bedding.

Pit F - same.

Pit G - taken at the
from N. side shows

Pit E.

Gabler's pit is located E of RR & N of road.

Photo 19 shows a N.E. view of pit from road.
The Gabler pit shows
cross-bedding, & uppermost
part is somewhat more
gravelly, less lens
formation than in

Hoffman pit (B)

There are thin Or bands
in the Gabler pit.

Photo 20 shows part
of Gabler pit - crossbeds,
thin Or layers, etc.

Now see a thin
fine gravel - it looks

Joe picks up a bone in
bottom of Gabler pit
which may belong in
Gravel. It is said
that bones have

been found in this
pit.

photo copy 31

Sept 4 + Sat. 1909 gravel pit

Drove W from town by

old part of Simbadia

4244 ft. on road going

straight N & a little

W. to quarry in valley

giving

drive down to

gravel

pit

Dear
Lake

Dear
Lake

Dear Lake
I have just
written you
about the
quarry.

Today gravel pit in bottom of
road & west of road.

On the left side of the road

is a large pile of gravel

and a smaller pile of gravel

shrub
in shrub



o

o ^{large} [box]
grass (b)

o

o grass (b)

o

o grass (b)
red (b) a
red (b) green

o

o [box] closed

Red and green grass mixed
green red - mixed green
green red

green

green

F

green

green

green

green

green

green

green

green

~~Bethel~~ ~~Sept 2~~ School

the 3d & 4th

of

the 5th

~~Joe~~

~~Joe~~ ~~Aug 26~~
~~Joe~~ ~~Aug 27~~
~~Joe~~ ~~Aug 28~~
~~Joe~~ ~~Aug 29~~

Read in town after 9.
Took dinner with Kate &
the kids.

Joe brought like a
rather checkered at the
lamborn, & I saw him
for a moment at the
depot.

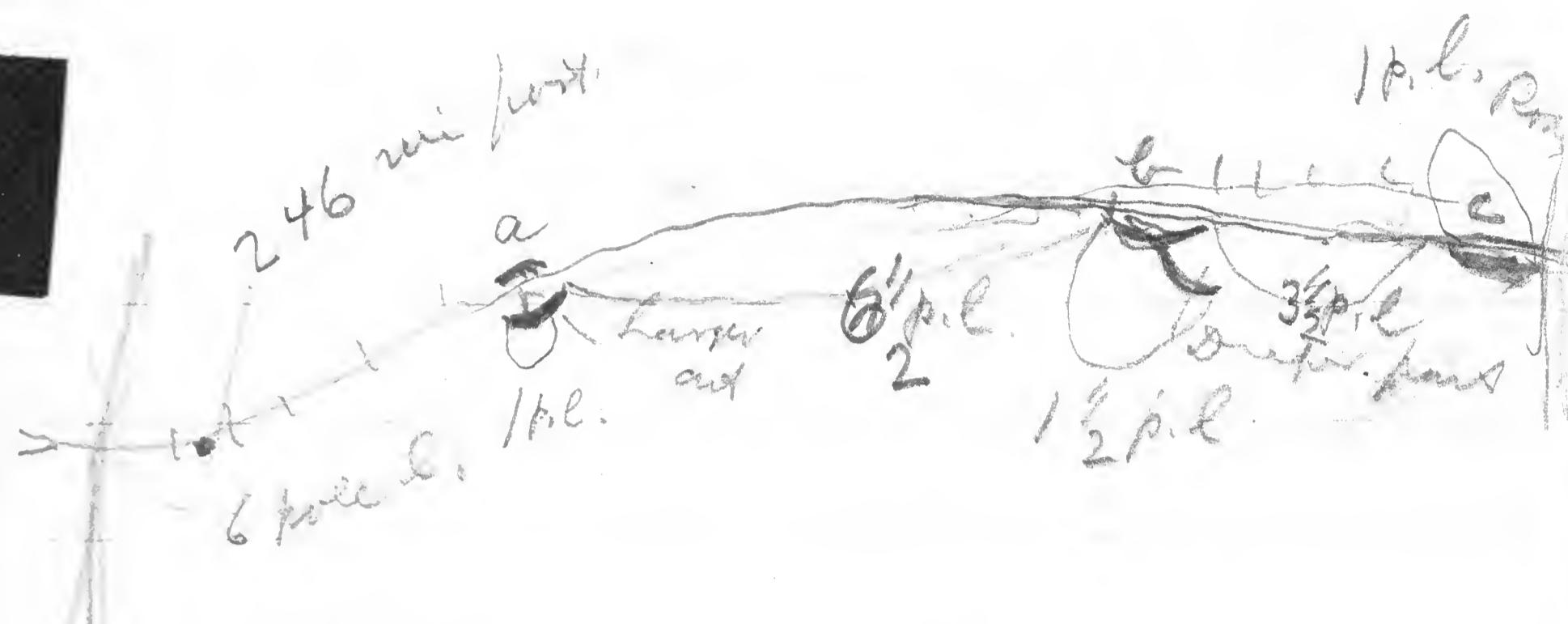
Left at 2:30 p.m. - met
Dr. Benois (of 1909) on
train. Lives at Spencerville
and wife Lee in Des
Moines from you.
Reached Inwood after
9 p.m. & put up at
Inwood House.

Sep. 5 - (Sunday), 1909
Day bright, - night was
cold.

Started along RR. west
walked out about $\frac{3}{2}$ mi.
west.

Pole l = 180 ft.

37



as (a) a short cut where

2-22-1959
Sunny
A generally
light, sunny day

64

Middle section shows a thin
(approximately) layer of sand
lenses

Long live

Pied shrike - Cawdor
esp. in gravelly soil

This is a new style of
writing.

Art C is irregular & shows 6-8 ft of
dark Kansan glacial. Surface 15 $\frac{1}{4}$

= This was, with many small red dots
& with yellow. Could not agree with.

and (C) is same as other part of (A).

A hand-drawn diagram of a plant structure, possibly a root system or a branch, with various parts labeled:

- Top left: "4 pl. l."
- Middle left: "d" and "4 pl. l."
- Center top: "small cut" pointing to a section labeled "245 mm. part (= 154 mm. l.)"
- Center: "6 pl. curve bend"
- Bottom left: "Small cut" pointing to a section labeled "15 cm. from bend"
- Bottom center: A circular area labeled "cut - opening" with "6 pl. 19 mm. dia." written next to it.
- Bottom right: "4 pl. 22 pl. 34 mm. dia." and "4 pl. 245 mm. long".

Cut (e) is mainly in + metamorphic
rocks (mostly Igneous), 2nd
stage lava sheet (see
sample). The next 2, 3, 4, 5, 6
follows the same pattern;
Depth roughly 6 ft from top
of Island, No. 1 site -
also sandstones.

from low Amazon east also in
Uruguay

all the hills about cut a, b, c, are Wisconsin to surface, & Solidago virginica the most common. The photo 33 & 34 - show Solidago virginica on hill above cut (b). Montezuma virginica very common.

The change from Wisconsin to Kansan- loess from small cut to cut e is very abrupt.

It is interesting to note that the younger Wisconsin surfaces W. are seldom cultivated, but used as pasture & are covered with Solidago virginica, while the Kansan loess is all under cultivation with fine crops.

Lift for Custer at 12:45 Took Custer & Canyon road. Noticed that there were considerable gravelly material on the surface of the plateau. The sides are steep on one side and low on the other. The gravelly material is gravel & boulders of various sizes. The moraine bank stands higher than general plateau S. The sides run along nearly on a level & the bluffs are evidently formed by cutting. At Fairview S. side, any great gravel road disappears & crosses cutting, & having aspect of stream bed gravels. The C. on S. P. is taking out great quantities of gravel. There are

from terraces along river.
They are evidently Wisconsin
gravel terraces.

The Big Sioux Valley
is mostly sand and gravel
terraces, plenty of
black gr. stones.

There are few trees
and small bushes.

Left Sioux at
3:30 pm & put up at the
New Kimball Hotel.

Expected to rain, but
it stopped to rain, &
continued a fine drizzle
all night.

Saturday (Mon)

Still raining with promise
of sun all day of it.

This summer has certainly been
a woodoo.

R. B. Swell in auto of
the Register Building.

Called at City Hall.

He said that in July see 33
93-48-5

Leave Sioux City Valley
in morning.

Prof. Sibley was promised
to speak at the auto club
from Big Sioux.

Rev. Prof. Sibley
Sioux City, Ia.

(He was at Sibley since)

He expected to go to
Omaha from

Prof. O. J. Smith
Pollack, So. Dak.

Was present at time
Jensen teeth were found.

Miss Maggie Kunderat
Akron, So. -

Found a small fossil
in a brownish tan form
of sandstone.

West of Sioux City
Dakota Valley 15 ft.
above rocky yellow brown
sandstone - $\frac{2}{3}$
with black bands
(and) yellowish
black trap. (See sample)

The older part of brown color
laminated like fine
iron bedding carbon.
The lower part was
mainly by black
alternating with
yellowish gray at top
and with brownish black
bedded in all directions
Kansan.

On Windy ridge south
of Sioux City, the
brown sandstone
is composed of
laminated clay.

The older part of brown
laminated like fine
iron bedding carbon
the older part of brown
laminated clay.

Bottom half of sandy deposit

(over only about 2' off ground
of hill or mound)

45

Four Pyramids situated
evenly apart, running in
a line along base.



First at middle of base
at 3.2 feet, a conical
mound (there is a depression
in S. a cut a post hole
Shows many fragments of
(broken) pottery, & no other
debris (possibly) visible
After a distance of 100 ft.
Two more pyramids situated.

Next to larger ones.

The others are much lower.

From 2.4 feet to ground.

This was the, I conclude,
mound.

All made of red soil.

Very high, very regular.

Through some dark clay.

Well made 2.7 yrs. old.

Made by Indians who
lived just across the bridge
in So. Babotá.

Underneath the sand
they find fragments
I saw the two teeth, one
little fragment of jaw
broken, in school at
Athens. Each had 8
pairs of teeth, the last one
as few very small. All
had three but two have
been worn down to
that double row almost
as black as pitch
teeth.

The bottom is composed
mainly of rolling stones
of gravel and the sand
and the particles of sand being
scattered among them
the sand then begins
to get finer and finer
there much sand wash
on each bottom.

The well is probably 36⁴⁷
ft or more in valley.
The well is about 140 fms.
S. of road 300 fms E. of
W. line of road
The water is clear and
free from mud
Mr. Sample and Mr.
Jensen, who made well
digging & cleaned through
digging.
The water comes from 3-4 ft
below ground
12-13 ft above ground
with water
soil about 2 ft
7-8 ft Gravel - sand water
into the sand
which is fine sand
and gravel
and sand.

Then I dug a hole (well)
in sand at foot lower
than the fence well, &
then I found probably
the way.

Well below 708

Pointing E across sand
and (so, sand) & then
fence well.

Then down ^{P low hill}

I took compass and took
a little N of pump.

So now take from well.

Measurements of

downcomer

In the following I took
balloon sets with an
orange peacock tail, &
then took some sand
big enough to hold some
sand.

These are off white sand
with very little color.
The sand is rather fine.

The stuff is well mixed,
but there is a lot of

blue & the blue looks like

blue glass or stone.

It looks like sand.

There is also

green glass and a

yellow powder.

Photos 25 & 26 - ~~Devon~~
W.

Bluff Forest very
dry sandy soil
with clumps of grass

All vegetation left
when we crossed

cut 2

part of cut 1

To 5. & 6. mds. of 5

ft. below top of
valley (about 100 ft.)

Yellowish sand

shale & sandstone

cut 1.

Cut 3 is on slope up to

small, Shows bedrock

bedrock & sandstone

green, sandy streaks

only a few feet.

This cut is in same ridge as
cut (1).

Remained cloudy all day.

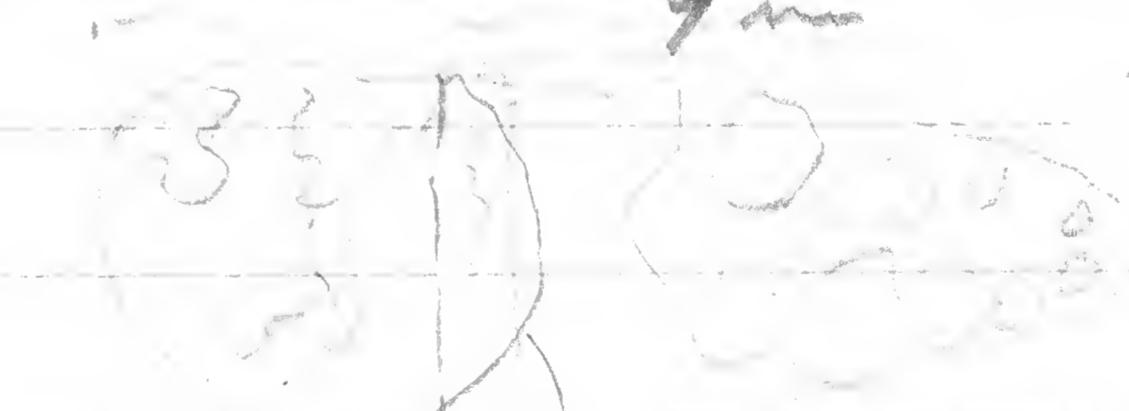
Sept 7, (Tues.)

Misty in morning, but cleared.

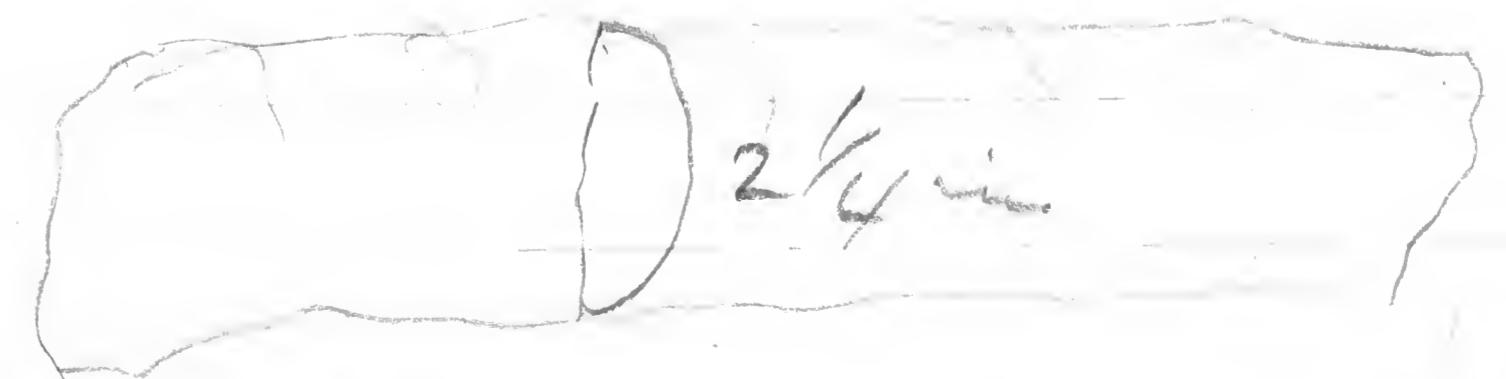
Went to schoolhouse and
took photos of teeth.

Photos 15 & 16 - Top view of
Tooth (1) - the one with
fragments of jaw.

Photos 17 & 18 - side view of
same. 9 in.

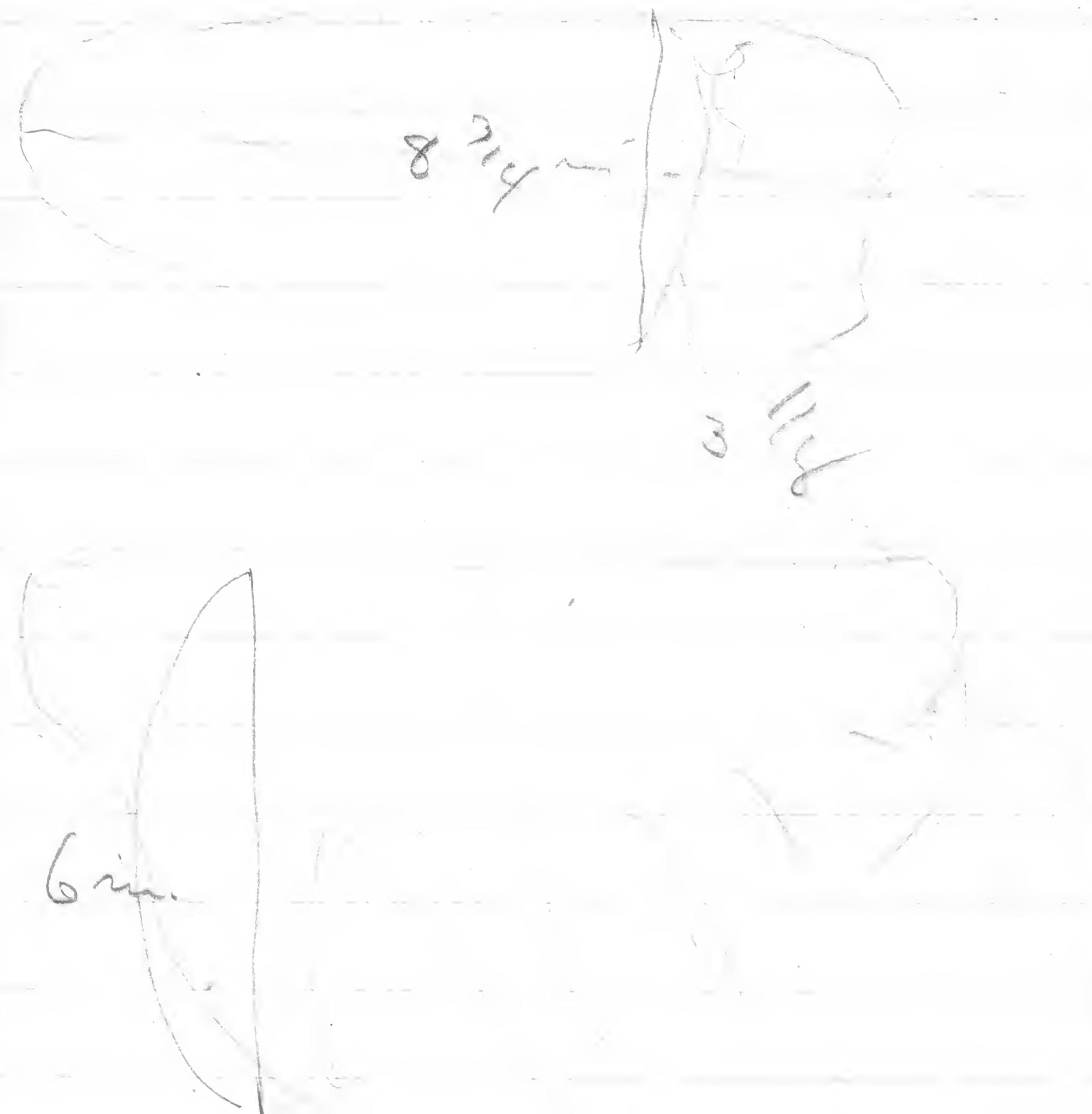


3 1/4



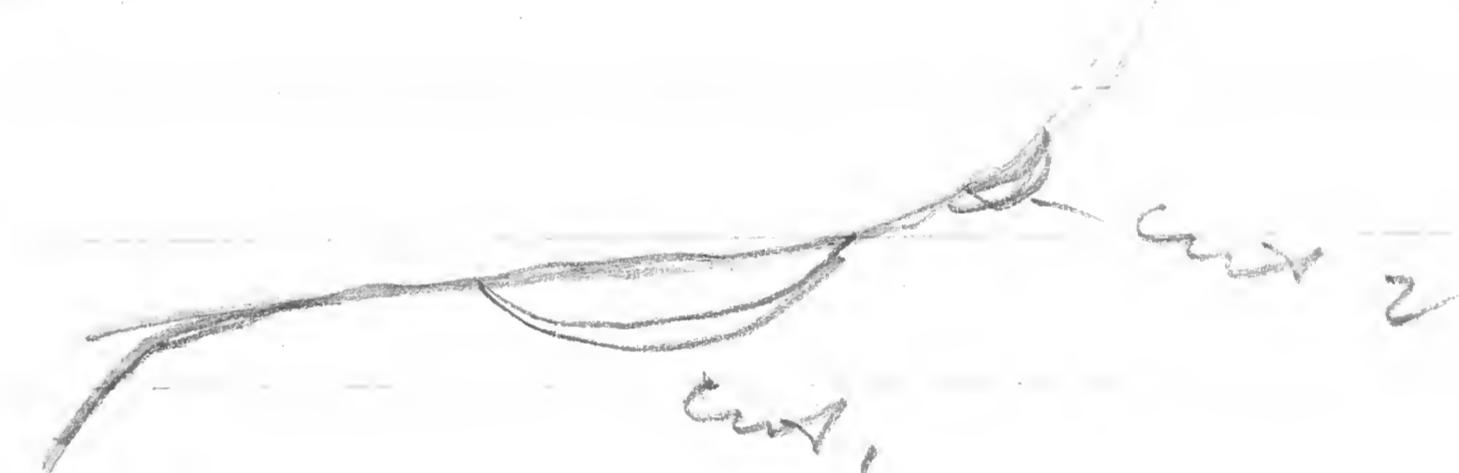
(- jaw -)

Zoth(?)
Phalaenopses top view
" g & d side view.



Lone F. Single from
jewel box

Lift for Chatsworth at
11⁴⁰ am. Started about
for Chatsworth 2 mi N.
of Chatsworth. There
are two large exterior
wall stumps, & a 1) cut 3
4



This is overgrown (cut 2)

cut 1-

Line 18 ft.

Marl

Gravelly sand & rounded
fragments, angular.

Black shale

The base is brownish yellow,
without shells, & with very
few small nodules.

It is medium compact.
In its lower part it shows
For about a distance
of sand bands & clay bands
as at Alton, but not
so thick.

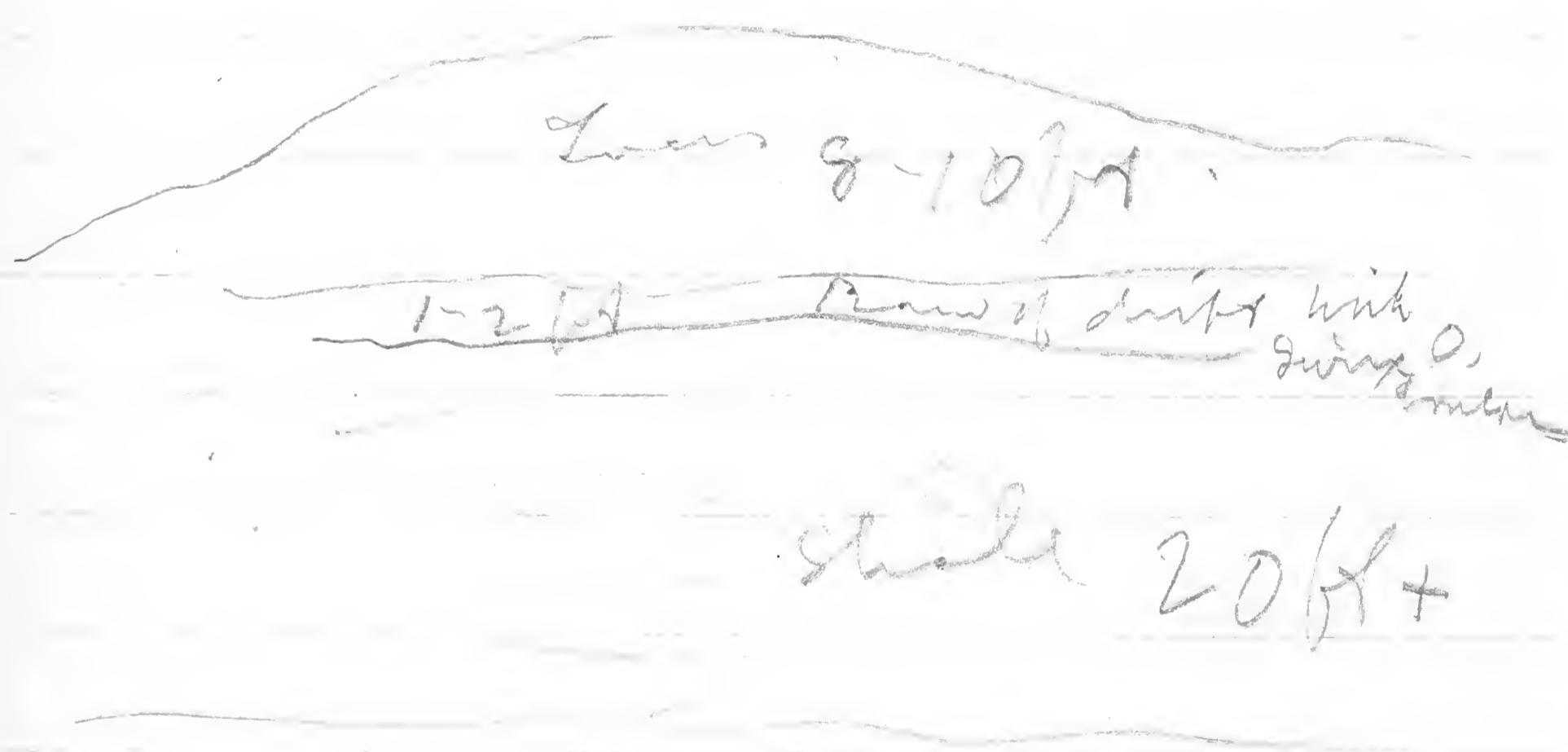
The line between base &
Kanner is sandy.

The upper part of
Kanner is mostly yellow
clay, bluish, with
few bubbles. Below are
the typical water Kanner.
It is separated from the
lower gravel & sand by
a strongly oxidized sharp
band, about 1-2 ft thick
& below this is black
shale.

rich sample of loam
15 ft from top & sample
of loam 15 ft below
loam.

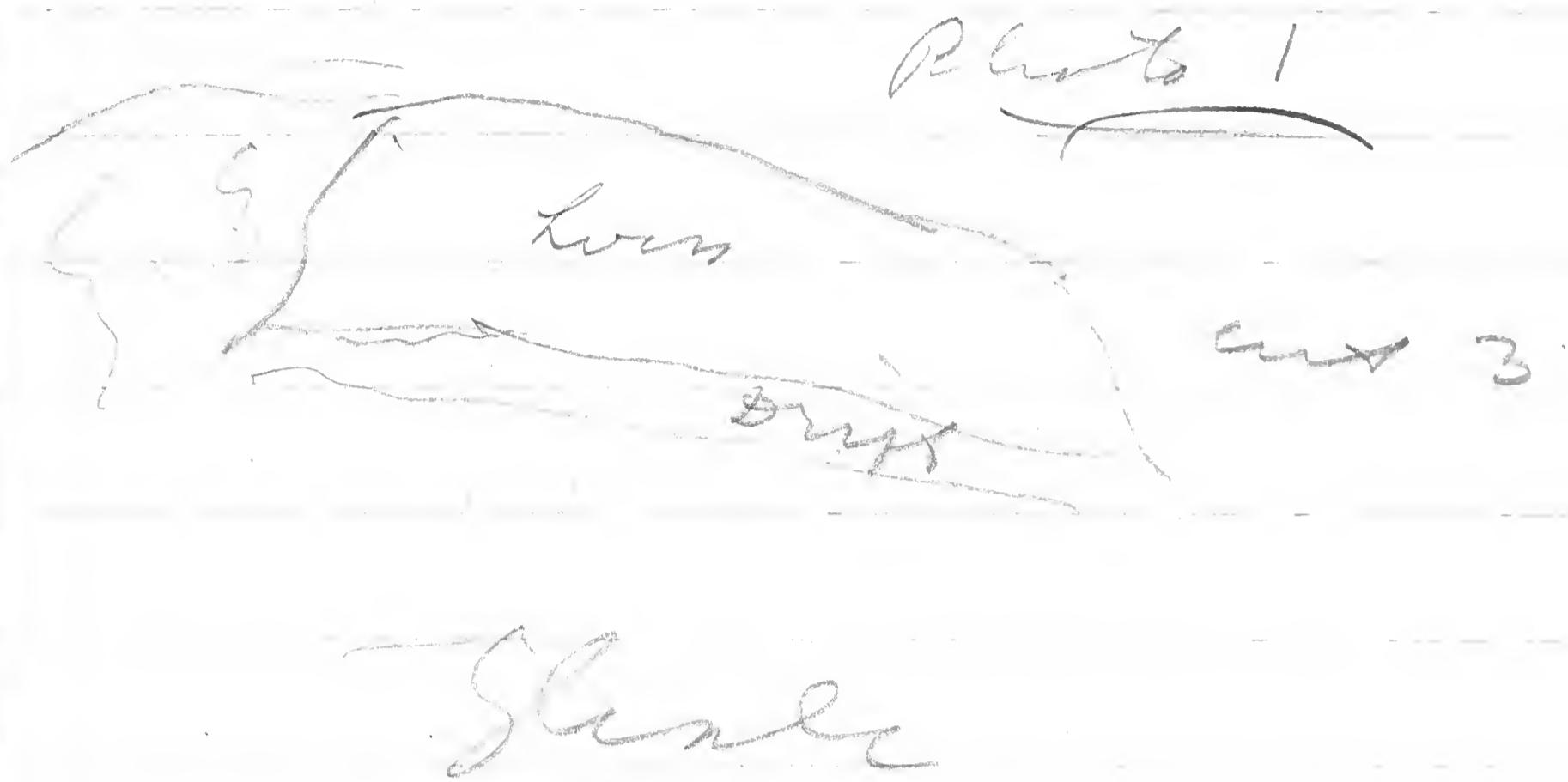
Cut(2) is similar but
loam not so thick.

Cut 3.



as view of this cut
leaves my brain,
the whole base, slides
out - there are things
evidently gravel & sand

smooth.



Plot 2 - cut 3
loamy 2 ft.

Plot 2 - cut 3
loamy 2 ft.
shows timber in shale
& drift.

Plot 3 - cut 3
loamy 2 ft.



Left for Sioux City
at 7 pm.

The hills below Westfield
become steeper, more
peaks -

To Westfield they form
a Kansan tableland.
Put up at West Hotel in
Sioux City.

Met Mr. White, a brother of
General White, who practices
(and!) at the Grove. Had
no quiet invitation from him to visit
also Mrs. Dr. J. Donahue, popular
of West, who is one of my
old academy boys.

Sept. 8 (Wed) 1909

Arranged materials, loaded
plates & loaded plate boxes,
put away like, and at 10¹⁵
am left for Sergeant's Bluff

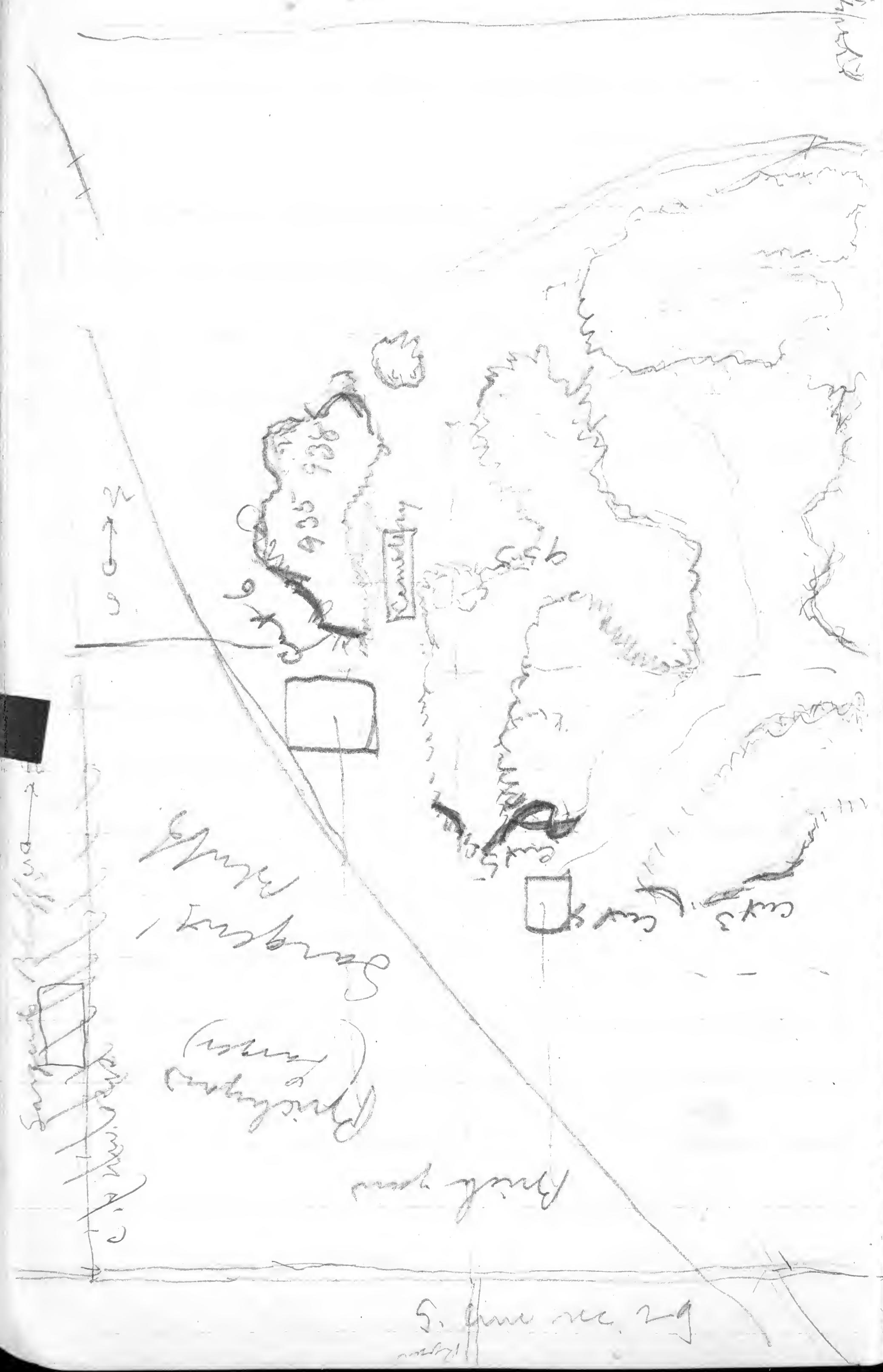
A cloudy, smoky day.
Cut #4 in S.E.-most cut - all the
cuts seem to be at ends
of ridges.

18.20 ft.



The atolian (?) is tilted to S.E.,
pushed up. It seems to be
nilly above, and sandier
below. The sand is pale yellow, with
the lower is yellow.

Along along top of black shale
is a very black fine which looks like wood,



Cut 1 is though brown - yellow
& not laminated along, more
compact, brownish, & laminated
below. Fossils - ice trough,
few small nodules, scarcely
above.

about 20 ft. elevation.

Large number of fossils
scattered here & there, but
more abundant upland.
Nothing but low exposed
in this cut.

Bottom about 815

Cut 2 about 12 ft

of rather coarse sand,
cross-bedded & with a
few small boulders.

Above this is streaked
(cross bed) with mud;
above is a thin
massive layer of

Loveland, - but scarcely
reddish - It reaches
probably 10 ft., & its
upper part has large
numbers of fossils.
Above this the gravel hill
rises to sides of loess
near top -

The base of this cut is
890 ft.

See sample of jaws below.
Few large boulders of Sioux Q
in afternoon.

This good pit has been
worked for years, & they
have not reached bottom.
No waves or waves
No bones or teeth.

65

Top of hill at cut 2 815
Top of base of rock (new?) 865
From usually seen like
in cut 4

Plaster OIV/2 - locality 35
from above cut 2. This may
not /

~~Preston D. Jr. writing in
from a box and 2 - towns
Highland Province.~~

Plot #10 Larch Hill
Row 2 second plot
Timber in the lower valley

Cut 3 shows reddish
limestone for 12 or
15 ft. with large
nodules in its lower
part. It is pebbly below
no loam shows in
cut proper, but
the till above in
loam.

The reading at base
is 895.

Top of cut 4 = 885

Top of sandstone = 870 in cut 4
at S E end

Top of shale = 840 +

Bottom just above cut 4
= 815.

Bottom of fiss is about 810

Top shale in cut 5 = 855

& sandstone " " = 870

Cut 5 shows only shale &
sandstone, but till
above is capped with
loam.

Photo 10 - Hamilton
area - fiss.

Cut 6 - shows shale below,
then white sandstone
above at 895 ft. There
is a shelf cut across
the loam and above it
is about 15 ft. (The till
comes close to where R.R. +
wagon road intersect - they
glad is not quite covered)
The loam has a few small
nodules & no cherts.

This upper layer is light yellow, soft & crumbly, sandy.

The lower part of the layer, below the shale, is distinctly laminated.

The layer extends down to about 875 ft

Under this I saw at least 3 ft of blue joint

clay (Kawan) with white
even bands through a foot
or two of reddish gravelly
(monolithic) stuff.

This blue joint clay
is same as in cut 4?

The dark shale begins
at about 870 ft

then under it there
is a pocket of sand,
& then more dark
shale.

Base of cut = 830
RR = 525

There is distinct shale
above sandstone. This
is finely laminated, as at
first I thought it was
fine Kawan, but it
is clear shale.

The barometric readings
were very satisfactory,
there being little
fluctuation.

Some black labors at
Kirkgate are Hwang-pien.
One young man, evidently
time-keeper - went to work along
with me. He is an intelligent
fellow who writes his own
language, and whom I met

in part understands. He spoke
with admiration of his gospodar
Nikola, son of Duria.

He expects to return to Cetynia
after three years. Says English
is hard for him.

His name is Mitar Weljevich
& P.O. is Sargent's Bluff.

He says "S Progess" is party.

Spent evening in viewing
plants, etc.

Remained

Sept. 7, (Thurs.) 1909

Went to Legend River side.
Visited Ryker sand pit on the
old John Kennedy (they call it
Maloney) place.

The pit shows thicknesses of
sand, over which a couple
of feet or so of joint clay
(gray or bluish) of the
Loveland texture, is folded
& masses above. There is
very indication here of folding.
Above the joint clay the loess
begins quite abruptly, & fully
20 ft. of loess is exposed.

The loess is the ordinary light
yellow loess - no humus,
few nodules.

In sand are some silty
plaques, etc.

The sand is evidently
afirme.

Top of Rydell's 965
 Road opp. 915
 " at angle N.W. 890

Top of hill above us -
 (medium bones, marshy) = 1020
 Barom = 28.69.

at 1X) top of bank
 Bar = 28.68
 elev = 1015.

Photo 18 (during same from X
 to Johnson pits. (26)
Photo 19 (same - (27)

N.A. Anderson
 Box 156
 (North Rim) Sioux City
 Ia.

Will save bones, etc.
 Promise little allowance,

Mrs. Anderson has found
 the specimens which he
 gave me in the three
 pits about his place.

He says there is no gravel,
 but all sand in his pit,
 down to a white "like
 limestone", into which latter
 he has forced 18 ft.

The teeth, etc., came from
 the sand, and are wonderfully
 afflaxed.

When he first opened
 his pit he had a layer of
 sand about 30 ft., but
 now in middle pit he
 has about 22 ft.

He has found various bones -
 one very large & flat,
 evidently scapula of
 Pachyrhynchus.

Among pieces received were
claws of Megalonyx
 teeth of horse (fragments)
 etc.

Also a fragment of
 cephalopod shell (nodular)
 There are also pieces of wood?

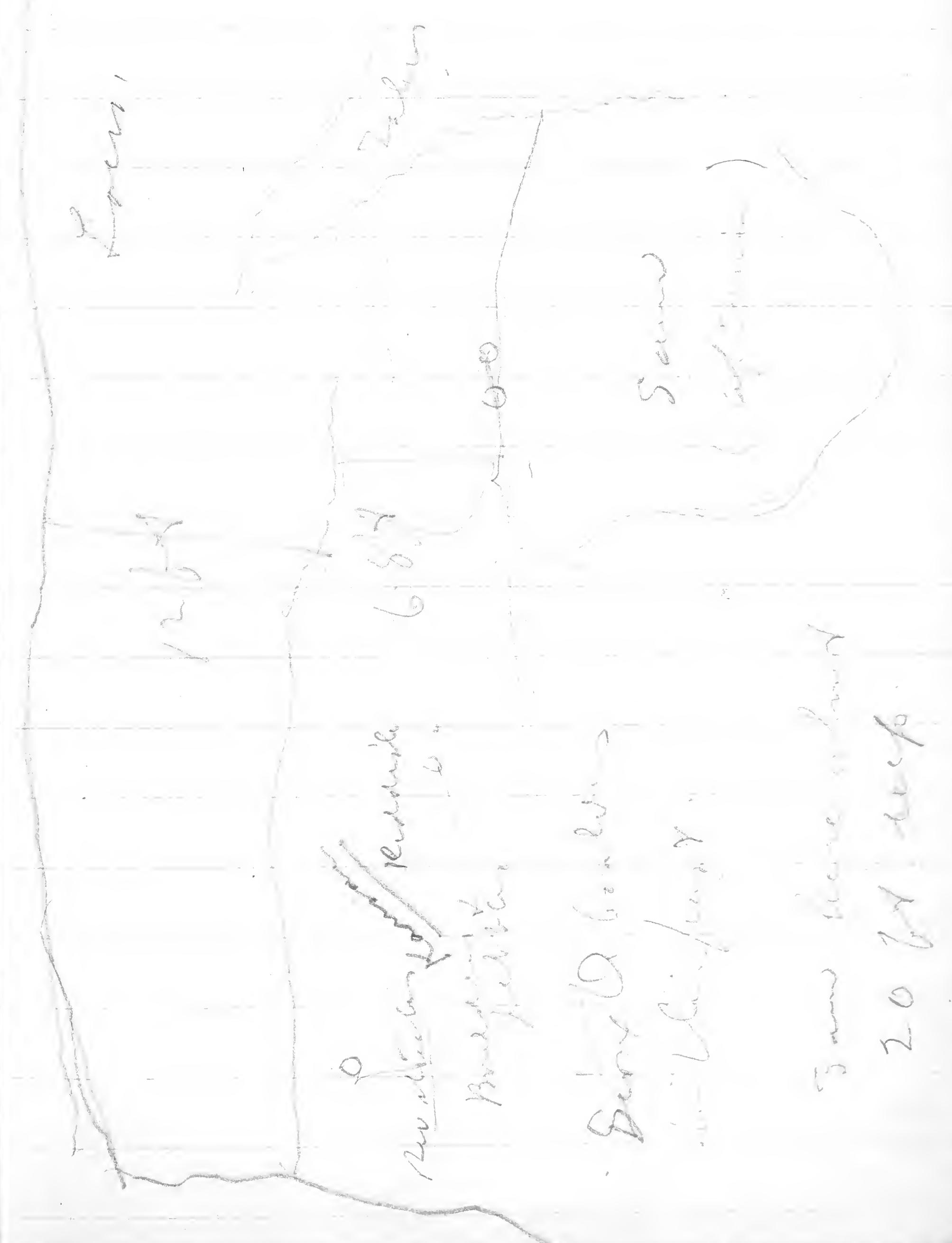
Photos n. (26) Anderson house
 " 20 (27) "

Photos 1 + 2 (26) middle pit
 " 29 (27) " " (same)

The sand in the middle
 exposure is white, coarse-grained,
 with some iron streaks &
 in other parts a few
 thin & sticks.

The photos were taken
 just offshore from

("intercoastal drift) which
 is now broken.



The Kansan is in part
typical, & in part (especially
above sand exposures)

beds just joint clay.

The fine ~~limestone~~ Kansan
& Aftonian is very sharp.
& oxidized in drift.

The cut to NW. (To left)

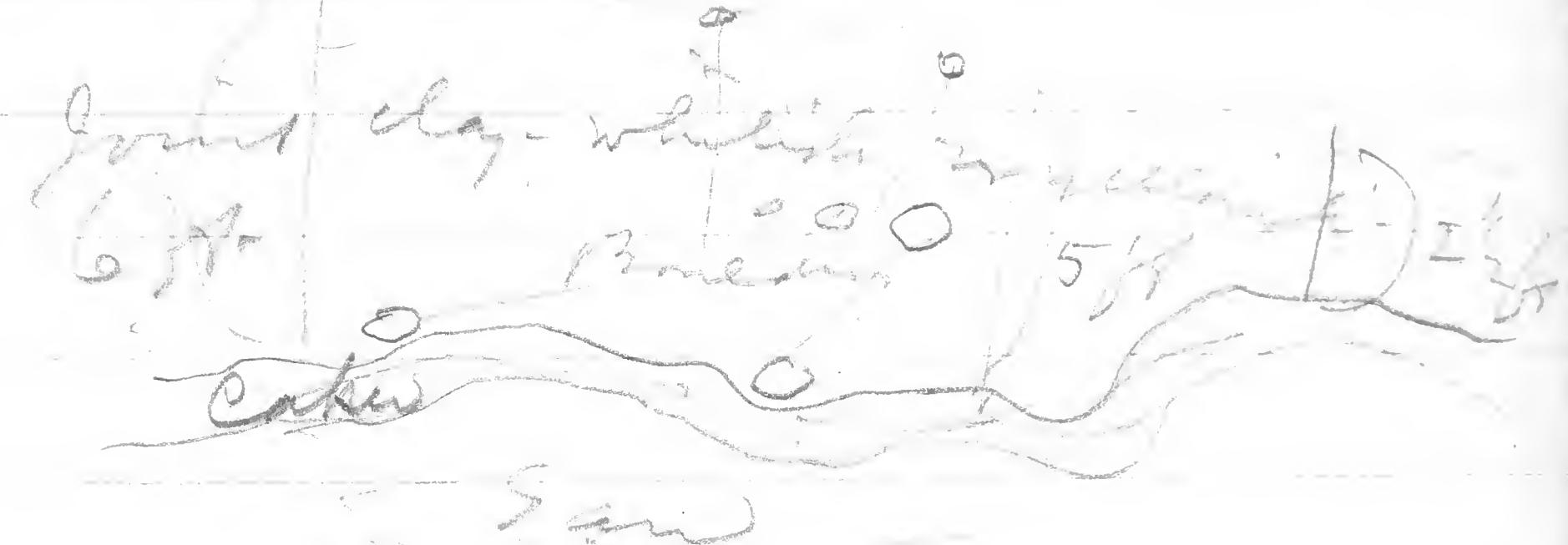
at its S. end shows

Aftonian below.

The fine limestone is &
Kansan is sharp, containing
lime corals & black
shells for 6 or 7 in.
or more, older white
shells.

Same sand as before.

Loren.



To right

This is S. end of new cut.

First 30' (27) shows above.

In 3' (36) common.

Base of pit 9 ft

Box. 26.75

Sand rises 18 ft. higher

Deeper no go hole under (solid)
in sand



south high mts.

Prov = 26,57

Alt = 11,25 ft.

Photo 4 (26) - looking E.
S. end of high mts.

Photo 21 (27) same - 1/2 mi.

No N. bush in 114 5 ft.

Photo 22 (27) looking W from

N. bush.

25 sec
evenly high hills and well
drained soil
same 1/2 mi

Photo 41 (26) looking S from same 1/2

mi 11 (27) same,

v.c. = very common
c. = common
n.r. = not rare
v.r. = very rare
rare

Plants on the steep low hill

Hill of low Cg

<i>Whipplea (mentha)</i> c.	<i>Panicum virginicum</i> c.
" (smooth s.c.)	<i>Panicum capillare</i> r.
<i>Aster ageratum</i> c.	<i>Eriogonum fasciculatum</i> c.
<i>Antennaria aristata</i> c.	" (Glab.) c.
<i>Solidago ligustrina</i> v.c.	<i>Melilotus thalictroides</i> r.
<i>Antennaria vulgaris</i> v.c.	<i>Althaea rosea</i> n.c.
<i>Microseris glauca</i> v.c.	<i>Balsamorhiza sagittata</i> c.
<i>Oxybaphus laevigatus</i> c.	<i>Polygonum aviculare</i> c.
<i>Cirsium heterophyllum</i> c.	<i>Lycopodium complanatum</i> c.
<i>Gesneria</i> or <i>sun</i> c. (one white)	<i>Lygodesmia juncea</i> c.
<i>Trifolium pratense</i> n.c.	" <i>Asclepias verticillata</i> ? c.
" <i>candidum</i> v.c.	<i>Andromeda polifolia</i> n.c. <i>Vaccinium myrtillus</i> ? c.
<i>Andromeda polifolia</i> n.c.	<i>Dryas integrifolia</i> c. <i>Rubus glaberrimus</i> (fus.)
<i>Gaura angustifolia</i> n.c.	" <i>Leptosiphon parviflorus</i> ?
<i>Amphioxys carolinensis</i> n.c.	
<i>Monardella purpurea</i> c.	
<i>Belamcanda chinensis</i> n.c.	
<i>Rubus strigosus</i> n.c.	
<i>Epilobium Hornemannii</i> n.c.	
<i>Syringa</i> - v.c.	
<i>Castilleja pallida</i> n.c.	
<i>Veronicastrum</i> n.c.	
<i>Lathyrus palustris</i> n.c.	
<i>Arenaria lychnitis</i> n.c.	
<i>Eriogonum microthecum</i> n.c.	
<i>Eriogonum magnificum</i> c. & C	
<i>Bartramia capillaris</i> n.c.	
<i>Orthocarpus apiculatus</i> r.	

Photo 10 (27) looking S

and on west valley $\frac{1}{3}$

" A (26) same but

Bottom at road 870 ft.

at road where I went in
28.85 Br w.
870, out.

Plot 9 (27) - cut d'

The loess is only part above
bur oak tree, with holes in
it.

The loess both in d & e
is thin probably not over
30 ft. (estimate) with
considerable joint clay &
dust below it. Some boulders

photo 33 (26) and

this is part of Six City
Brick & Tile works

Photo 10 (27) cut b

Loess

green clay
Roman

Shale

Plot 234 (26) same

Plot 9 (27) cut a

intermissional

Plot 9 (26) same

The afternoon at curve
of RR below entrance
to Park shows in cut
as follows:

83

If the old sandpit is
and (a) that my habits
J + I are not out but
the sandpit is just
before (A) in number.
The names & sample box
is counter jin N. of course
in P.R.

Sept. 10 (Fr.)

Mr. H.C. Powers was showing
of the birds big reading
of Gould & others.
Parker, slipped basket & pens,
& went to library & City Hall
to see Sioux Co. Accs of
Sci. & Letters collection.

Open Tues. & Fri. 2-4 P.M.
At 10 a.m. took car for
Morningide, & went to end
of line, near C. W. St. Dept.
(now abandoned)

At depot there is a long cut, extending from street to street, & running up to 18 ft in depth, or more.

It shows fine yellow (light) loess, laminated below, slight reddish in upper 4-6 ft, with very few nodules & no shells, excepting possibly small fragments.

The cut about a block below, at curve, is darker on S. side. It shows the same as depot cut. In road cut, etc. I notice that nodular layer is very prominent above, for 2-4 ft. The loess is all yellow, light.

Cuts at corner of Rustin Ave. & Leisch Ave. (along car line) show same yellow loess. Probably no ft. in some cases exposures.

All the cuts in this vicinity for several blocks, show same thing.

Some of the cuts extend to 30 ft. deep. The greatest part is then composed of red streaks, above that laminations, & a large red brown yellow mass.

The big bluff next to Floyd river is at least 66 ft. high & seems to be all brown & like others.

Photos 31 & 32 show this bluff. Young cottonwood on face.

Cherokee - horn of buffalo
ash where mastodon jaw
with teeth - on car -

came from -
Have tusk which came
from Mapleton - all
broken up.

Have samples of soil
1500 at 600 ft. Mean.

Was sick all P.M.,
feverish, also to sleep about.
Left at 7:30 AM for Red Valley,
received my mail, and started

Sep. 11 (Sat.)
Rained early AM.
Left for Coddell at 10 AM,
went up to Johnson.

Clouds of dust were made
by wind from base of
Harrow.

Visited O.V. Johnson
along Johnson's Creek Rd
Johnson.

End of 19

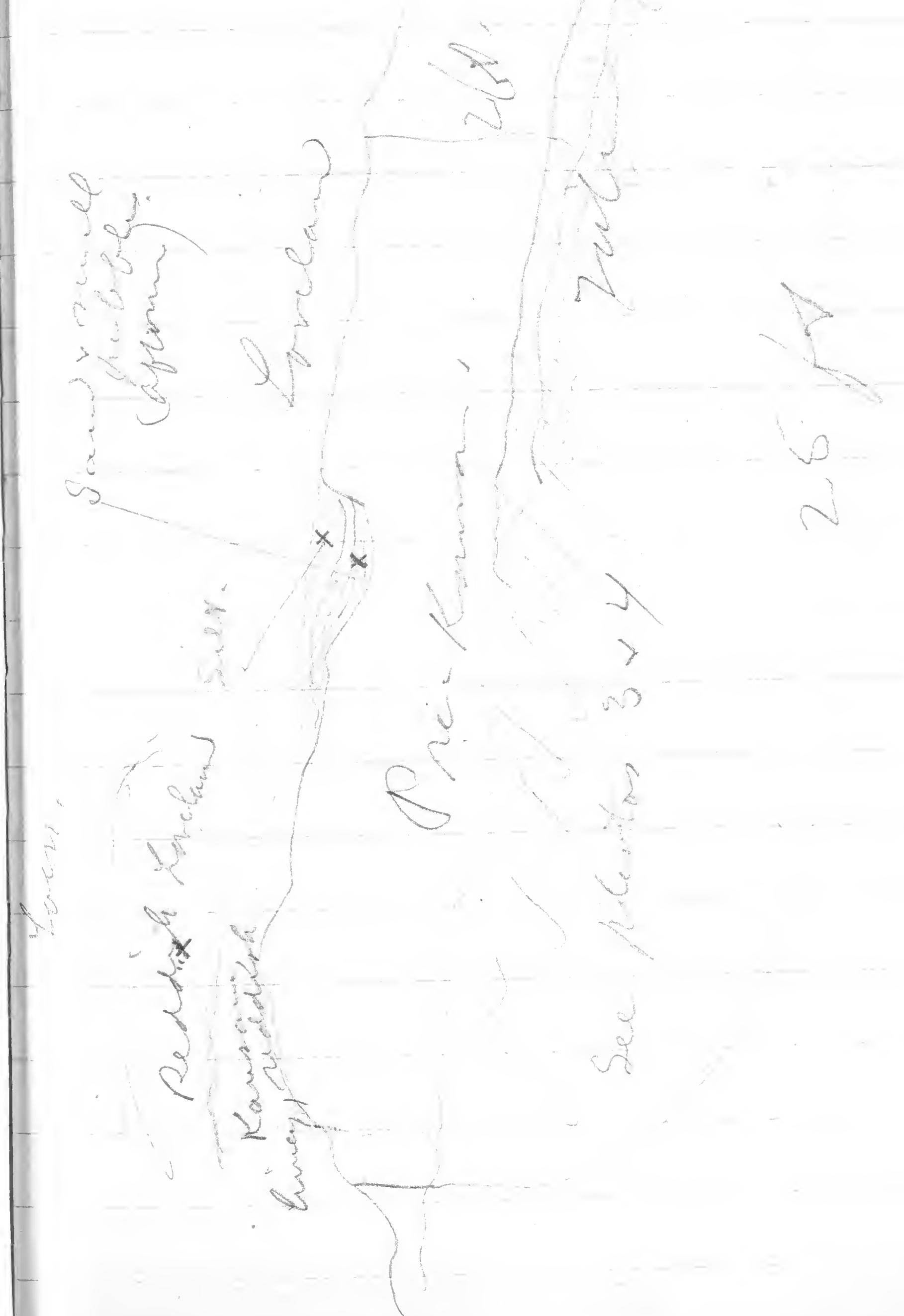
Went first cut above Pries
Lake, - about 200 yrs ago
when road^{not} above Pries Lake
runs up hill; there is
a gully made by man
fire-gouge.

Here Pre-Kans - black,
with few dark pebbles &
now top an occasional
very small sand boulder,
shows up to 10 ft above
bottom base, 3 or 4 ft
being exposed at highest
point.

See sample of Loreland, Oftnian,
silt, & pre-Kans, taken
at point marked X

Look photos 4/842 at
N. end.

Polybasin shows bed
for 50 ft along bank &
north.



(1) This exposure is at
foot of high hill, more
or less slumped over on
the park. However
a thinning sandstone bed
100 yds N. of streamlet forming
Pine Lake?

~~390~~

(2) About ~~200~~ yds farther
N. a coarse sand & fine
gravel pit appears.
It rises 6 or 7 ft above
bottom land & extends down
at least 6 ft.
It shows cross-bedding &
seems to be tilted up
towards west.

This is evidently
Aftonian

(3) Another smaller exposure
about 100 ft N. shows
some white silt nodules —

(4) Another cut ^{about} 205 yds north
shows cliff face up to at
least 16 ft. above bottom
and + 12 ft above water.
The strata here also tilt
markedly westward (tilted
up) & cross-bedding
is strong. The same
sand & gravel
The bottom above
with numerous streaks
& bands & clippings of
Mud.

Some parts are quite
wet. This is certainly
Aftonian. Coal may
appear above, but has

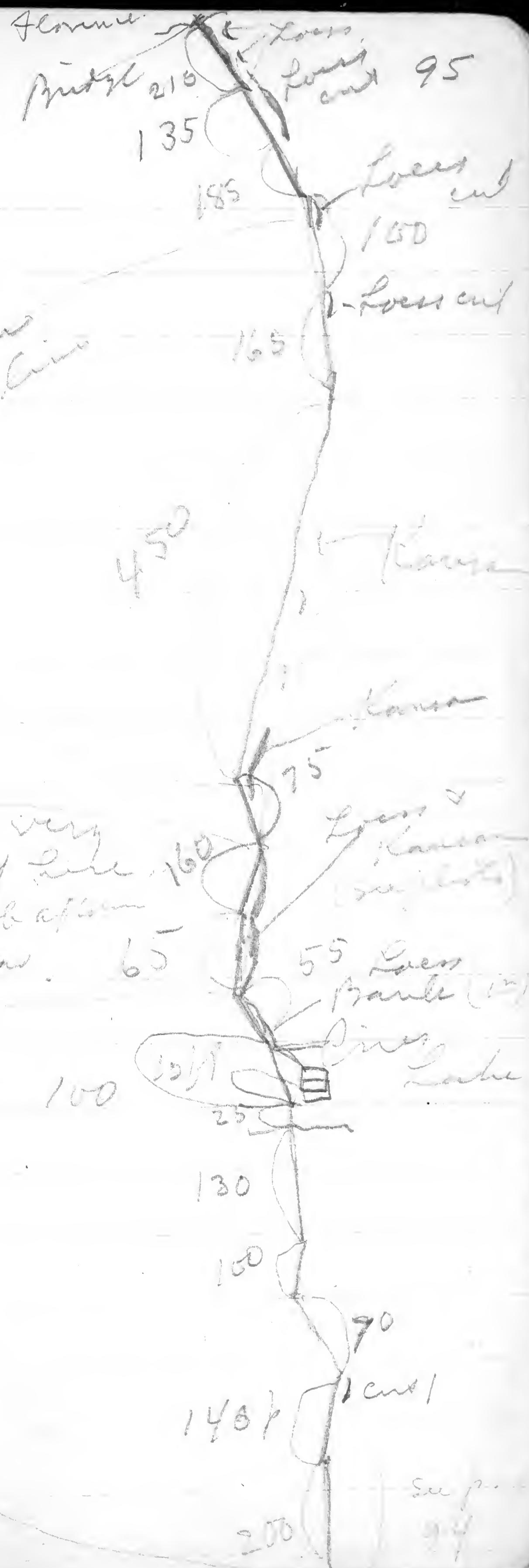
is evidently slumped
~~etc~~

(5) ~~tops~~ W. and the
less distinct exposure
on big bluff above the
valley extends up probably
50 ft. above now.

(6) about 200 yds S. of
creek at foot of Long
hill a bank of loamy
stuff, but mixed, with
dark streaks etc & not
showing evidence of any
shells or lot of broken
shells (see box).

At foot of Long hill on its
bluff, east side, ^{about} off road,
there is a large opening.

There is a group 93
of springs here.
Boulders, pebbles & sand
in the bed of stream
running from big spring
W.E. of Gildie's house
+ 4 boulders etc along
base of bluffs & in
an old road indicate
that this spring is
from alluvium.
A low stand and a few
S. of springs.
South of this + just
way up hill -
evidence of which near
the old road several
prominent.



more or less sand & gravel,
& also much Loveland
shale between Price Lake
& Long Hill.

A little sand & gravel
seen in creek bed just
N. of Flora.

There are springs at
seaky places at cuts
2, 3, etc.

Also the large spring
below Long Hill also
comes from that springs
below (in this territory)
eventually to the
Affonian

The Loveland is more
or less prominent all
along the bluffs, constituting
only a thin layer, and

again quite thick.

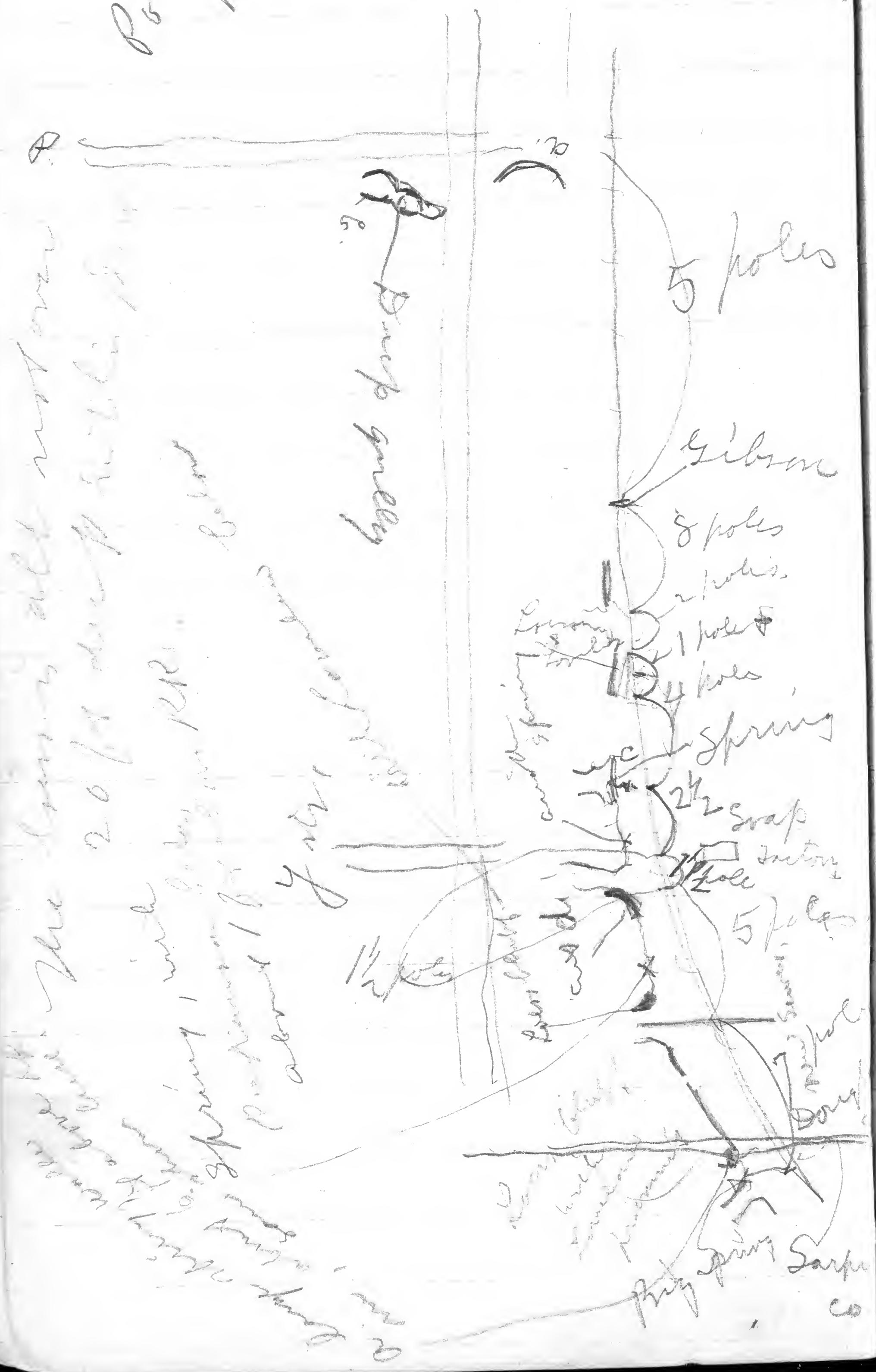
It is evident that
the Affonian extends
under nearly all these
bluffs.

The alluvial layer
containing coarse shells
lies just at level of and
above 2000 ft. It is
evidently the same
alluvial layer on E.
side of river as may
represent partly the
object of collecting.

The workmen have been
grading road, and their
made observations
numerically favorable.

1909 Sep 12 - Sunday

Poles = 150 ft
1st Went S. with
Gilder & Gallatin
2nd Rained all day.



225°
75

99

Cut (a), more slumped, contains living marsh. The ground (marsh) is strongly weathered, & the fine stream is good. Color is sharp. Below the sand is clearly below the ground, and hence afternoon.

It appears to be forested however, and probably represents a lower part. This is also suggested by additional

Reading at base = 975

About top of ^{base 28.82} sand = 1000

Reading at RR line = 975

Base 28.84

In cut C - the ground shows above afternoon, - little below.

In the deeper part of cut (a)

washout the Afton
flows below Loveland &
a depth of at least
15 feet.

The upper 12 ft. ^{more} ~~more~~ feet
is pretty regularly
horizontally bedded the
layers being alternately
fine sand & fine sandy
silt. Then below that
there is coarse sharp sand,
more like ordinary Afton;
appears below. This
part is steeply oxidized
slope, little streaks
& bands of Mn O₂.
The east part (valley)
of cut (b) has Afton
(Bp) about 1000 ft.

At the point (c) a strong
^{2 or 3 ft above top}
spring comes out. There is
here a layer of pebbles
over 1 ft. deep. Above this
are 2 + ft. of a conglomerate
very limey, & with some iron),
and above this some sand
& gravel offshoots. Out of
this comes the water.

Cut d. is sharp exposure
extending well up toward
top of hill, with very distinct
yellow column does resting
on red Loveland which contains
the humus below acid and
permits of slow weathering.
Lower part
See figure on next
page.

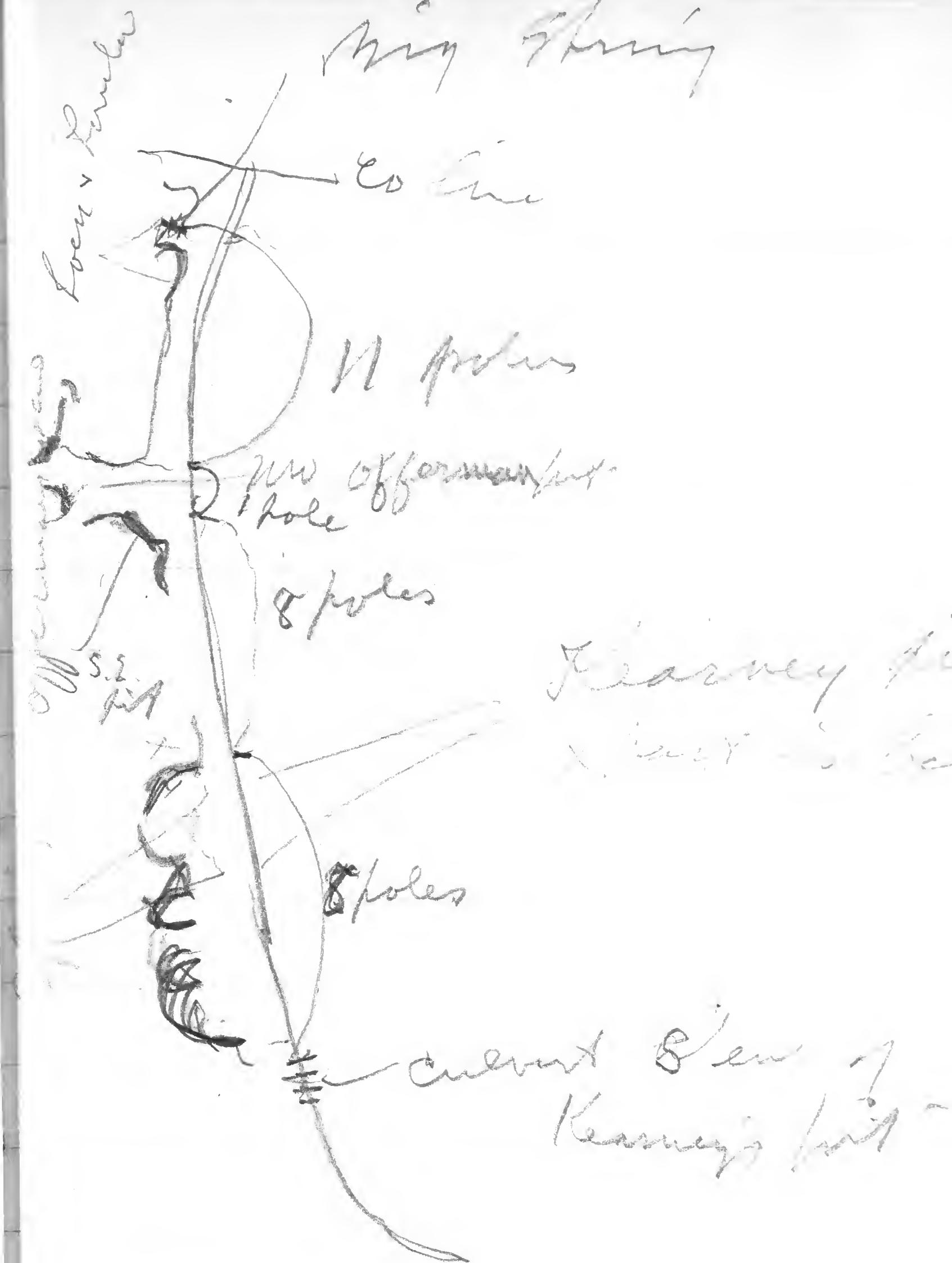
cut d.Lenses - yellow
columnReddish
Levee sand

Talus

Afternoon

The S.E. pit shows about
8-15 ft. of sand.20th
Levee sand -
all reddish -
no lenses
very few belowAfternoon sand -
and- cross bedded with
yellow lenses

the afternoon sand



To left of the in pit and
(see p. 103) the sand layer
is much lower - evidently
a slump.

To left photos of S.E. in

levee

afternoon

as Offerman hit the sand & gravel (sand above & gravel below) in the NW. pit; the sand was up to altitude —

sand is about 25 ft. deep.
The bedrock are in lower part of the
Aftonian. Below the
Aftonian the Pre-Kansas
appears, & they went
into this, Mr. Offerman
says, 16 ft.

Above the Aftonian there
is about 3 ft. of bedrock,
& then about 8-12
ft. of loess.

A reddish bar appears at top
of bedrock - 1 ft. thick
top of Aftonian in NW
- 1025, March
28.79.

Bottom of sand is just above
1000.

Mr. Fred Offerman
212 N. 25th St
So. Omaha.

From program of Lincoln
& of Deeken's report in the
S.E. pit.

1015 or top of S.E. stone
28.79 - Barren.

Plastics 5+6 thin
expos (d)

The Kearney pit has been worked for 25 yrs.
The last part of cut, at x, shows

new 8-15 ft

Lovilam
(reddish)

soft tan sand

coarser below & with
MnO₂ streaks - roughly
more or less tabular, very

clearly cross-bedded.
No gravel, but sand
varies from coarse to
fine

altitudes at base -

1015 ft. B.M. 28,29
alt. of sand top -
1058

The Lovilam, black &
brown are common in
lower part.

In a pit to S. of the
pit (or in S. part of it)
a couple of feet of
purple brown clay at
level of hill switch.
Probably off from
main line R.R.

100 ft further S with
about 5 ft elevation.
Some small broken
& weathered & the
purple brown

at S. end of the great
but (now partly abandoned)
the McKearns is exposed
for 6 ft - its top
= 1010 ft.

Above this there are
beds of sand & gravel
gravel composed of
big boulders of greenish
& red sandstone
of which some are
of cut stone.

28.63 Bar. on RR track
990 ft. " "

A few miles the
Native Wilson.

Toward evening a little
wind storm swept up the
valley, and great clouds
of dust were raised,
notwithstanding the fact
that there had been a
heavy rain early in
the morning, and heavy
showers until about noon.
When the wind subsided
the dust was scattered,
or ^{nearly} all the drifts
examined today

Mr. Alder, with Mr.
John Greenstein (a gas
man) and Mrs. Childs
after whose family
point below S. Omaha
was named, went
along, & took much
interest in study of

state, all these men
have been at work
on mounds.

In S. East Offerman pit
Mr. Offerman found and
gave me a fragment of
what appears to be
a tooth of Elephas
maximus, and Mr. Childs
found a fragment of horse
tooth.

Mr. Offerman agreed
to save all bones, teeth
etc.

Send him report on
Aftonian finds.

On my trip in 1890 I
saw numerous springs all
the way down the river;
These are probably from
Aftonian
Rains here just after we returned.

Sep. 13 (Mon)
Left for Logan at
8th AM.

Had rain much in the
night. Lester Adams is in 2nd sec. 14 mi. of Logan.
In the Book of Mormon
Book of Ether, Chapter IX.
p. 590.

"19. And they also had horses
and asses, and there were
elephants and cureloms, and
cumoms; all of which were
useful unto man, and more
especially the elephants, and
cureloms, and cumoms."

I found this in Book of
Mormon at the Library
Office.

Went out to cemetery
& collected plants. Took
lunch, & went to see
the fossil pumpkin & the

coast land, with a hard clay (critaceous) under-

Drove out to Harris gravel
with Beckwith.

Rained most of forenoon &
thundered all afternoon.

Went to sec. 3 - 7843,

to John Hull's gravel pit.
This is on side hill, at
about usual elevation.

There was sand on top &
most of it is gravel.

Went into this about ~~top~~
2 ft. - water at 6-7 ft.
from top of ground.

This pit is about 30 feet
(estimated) above the
valley of Harris' brook.
It shows an
overlying Kansan - bluish,
with white streaky pebbles

etc., above, on a slope,

Kansan
gravel.

The gravel is not very
clean, being more or less mixed
The material exposed for 3
or 4 ft. is mostly rather
fine gravel, & cross bedding
is not here distinct.

The gravel deeper down
is clean gravel, says Mr. Hull.
This is in all probability
Aftonian. Mr. Hull
never got Afton gravel
in his gravel pit.

Occasionally dark
shells (Murchison).

Pockets of fine sand.
Found a piece of clam in
sand, probably from Aftonian.

Dr. Kennedy went with
Mr. Pickering to
Mr. J. B. Hornby's -
was sick, & postponed visit.
Dexter went & met
Dr. Weeks, a voluminous
geologist. He has a lot
of rounded materials, two
stone mortars, axes, etc.,
gathered in the vicinity.
Ranier pictures and
sketches all night.

Returned to Mt. Valley
to meet Dr. White.

Sep. 14 (Tues)

Rained in morning, wrote
notes, letters, etc.
After dinner drove to
Collaroy and got some broken
pottery, etc. Cliffs plants
on south ridge, & took photos.

Rhode Island N & D river. N. end.
bottom right side of tributary
Plant 21 Sta 4 mean river of the R.

C X

Plot 22 more stations
annual count (4)

Pivot it - same.

Photos 334 + 344 - Gaster

Pizza! View window sta.!

To Cullinan 2/2

~~Berlin~~ ~~Wiss.~~, same with front
end.

Photos of ♀ & ♂ - show station
1 & 3.

3



Drove to Cox's Town
Mr. Cox not inclined to
part with his mastodon tooth,
Claude gave me a horse
tooth (fine), a shark's tooth
(from Abra shale?), and
another large tooth.

Fine clear afternoon with
exceptionally clear air.
Wrote & packed in evening.

Sep. 15 (Wed.)

Packed & shipped small box
of plants.

Left for Woodbine at
8 am. A fine day
promised.

C. G. Kiefer - see 24-80-42
^{sw. cor.}
^(part)
found buffalo skeleton in creek
near house - the skull is at
his house. - Was about 25
ft. deep old bull in worn
teeth.

On W.W. Miller place in
Sec. 16 29-80-72 also
got above record. A
hard pan was struck, says
Mr. Kiefer

From ^{old} farm between
Logan & Woodbine, east
a $\frac{1}{4}$ mi. to old quarry
on E. side of valley but
by it - east from bridge -

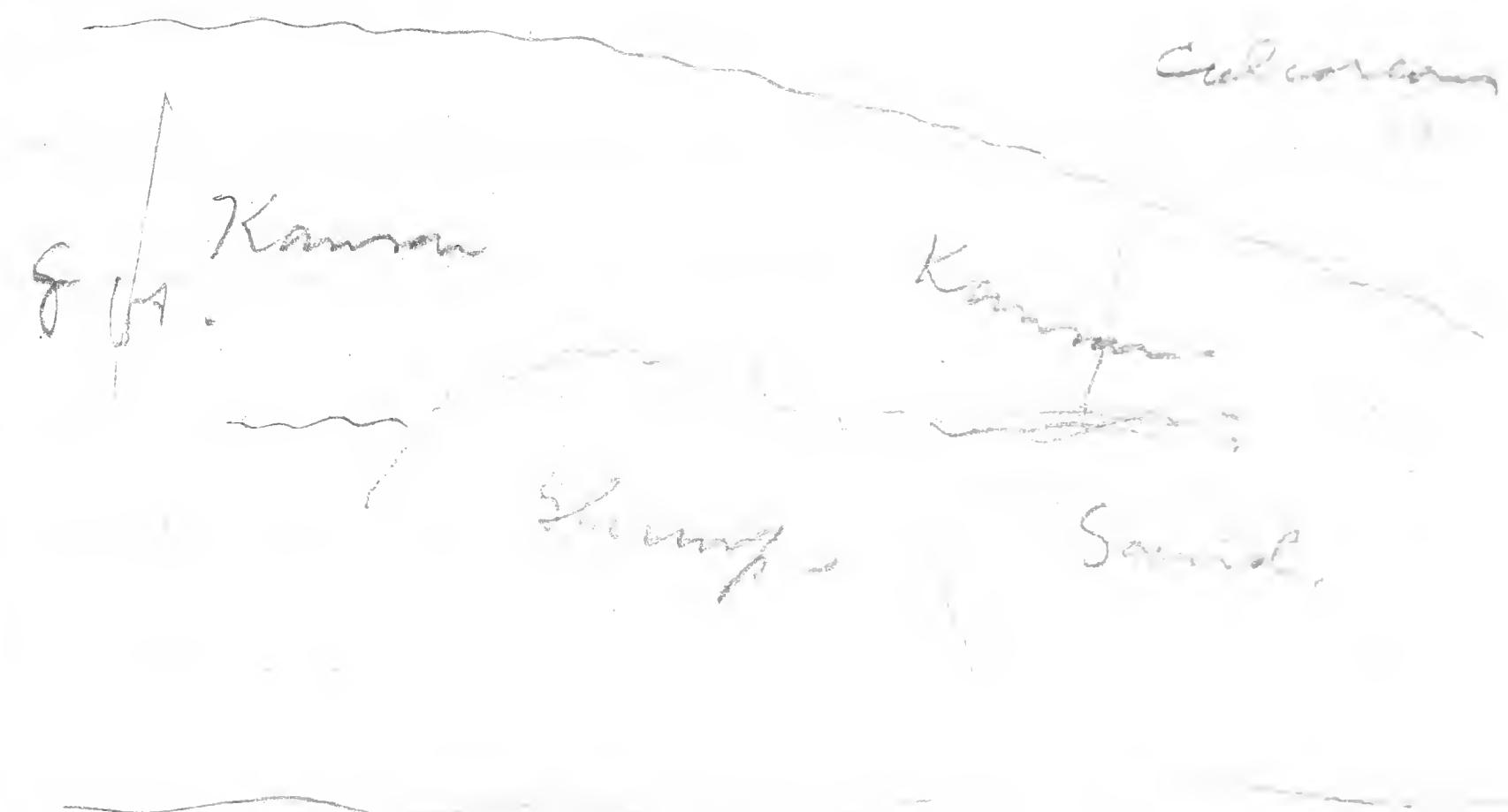
The bed of creek has
processes & boulders in
it. Above is brown-yellow,
cut on N. side road in
bed of Neff river 3½ - 80-41
is quite deep & shows
bluish (gray) layer below, laminated,
with some sand lamellae.
Upper part yellow.

On Mefford river 31 has a
sand pit on S. side of
little creek.

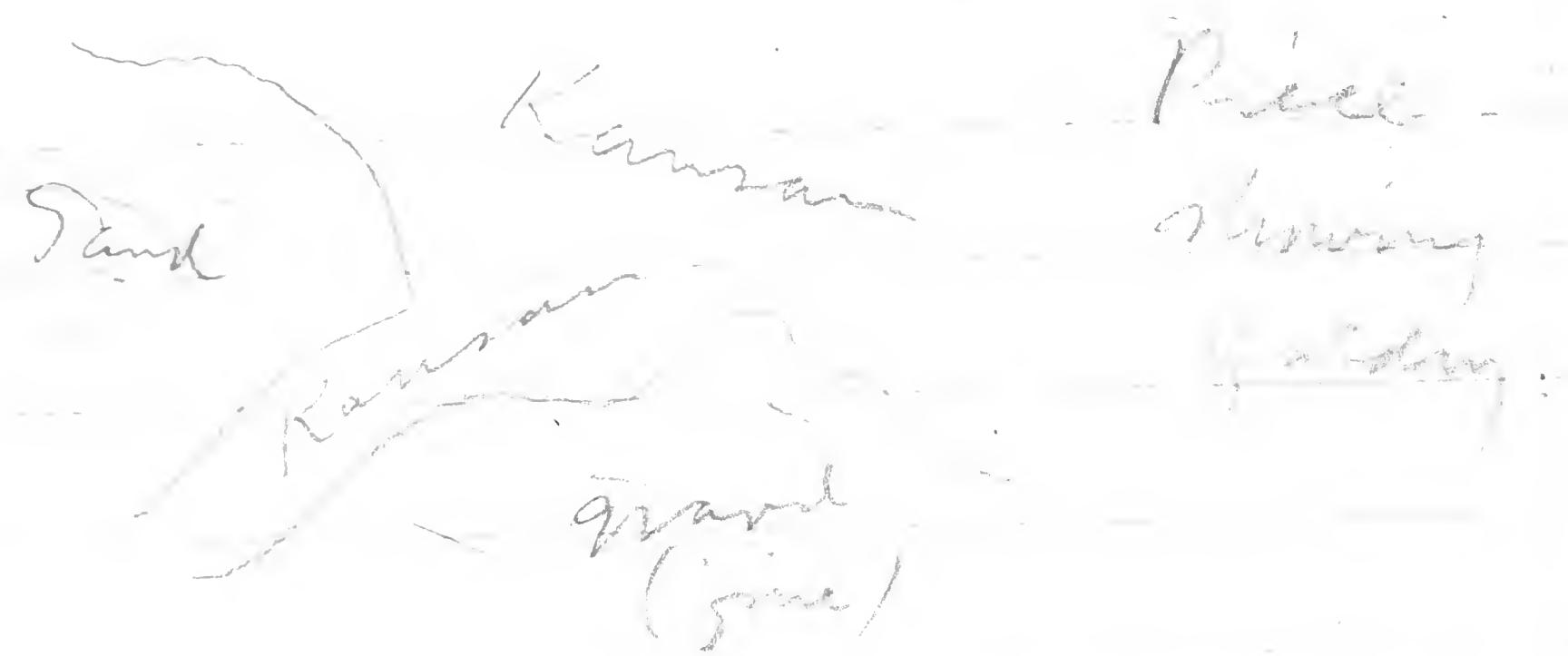
He has gone into sand about
10 ft. Changes to fine
gravel below.
Between this & Kansan
there is a calcarous layer
as usually. The upper part
of sand is mostly.

Typical calcarous Kansan
rises from 3 to 8 ft. above
it.

The road is snow-covered, the
upper part has Kansan streaks
& there are a few rotten
granite boulders.



A few rods further south
on same side of creek,
there is a high bank 20 ft.
& down 6 ft above bedrock
of coarse sand & gravel,
with Kansan boulders,
evidently a gorge.
There is more gravel here.



Mr. Bufford's well runs
to gravel for water.

All along creek (down) for
more than one mile
gravel, rocks and
sand along.

The creek has a
narrow gallery, but
widens in the alluvium
at times - above creek
on beach 40 ft well -
sand to gravel.

Know well - barges,
also on gravel.
Only oaks in 12 mi. none
but oaks.

In sec. 29 Fred Mullen
has hit - with 10-12 ft +
5-6 ft. of dirt alone.

Sand right below & some gravel.
Water occurs in this.

Returned to Logan at 2 P.M.
& visited Mr. Clegg.

He gave me notes on:
"House northeast of Logan
R.H. Read's house well 70 ft.

to sand. - no 1/4 mi., 30-7942

R. Hill's house well, 70 ft.
to sand - see 19-7942

also copy of letter from
Dir. Engineer Clegg R.R.

March 26, 1903

"Between Logan and
Mo. Valley, the Boyer
Valley falls about four
feet per mile or between
Mo. Valley and Boyer bridge,

about one and ~~one~~ tenth
feet per mile."

From Ill. Cent RR

May, 13, 1903

Total fall of Boyer Valley between
Dunkirk and Woodbine is 32
feet, or an average of three
and 2 tenths (3.2) feet per mile.
Total between Woodbine & Logan
is 25 ft., or an average of 3
feet per mile.

West of Logan the average slope
of the Boyer Valley is about
two and 8 tenths (2.8)

The ditches are in dried line
not following meadows.

In Mr. Smith's history it
should be 10 ditches
instead of 12, and they
are exaggerated in size.

Obluming history good.
Mr. Chas Lamb in
Raglan says (Woodbine
is P.O.)

Mr. Crow says that
Lem Mufford and
Mr. Prossley of Avondale
killed last Buffalo —
(see Co. report)

^{elephant}
Lester Adams tooth was
near middle of current on
S side (~ base of
stone wall). Lay on top
of lime rock, in gravel.
This was collected in fall
of 1902.

(Ask Mr. Crow about
copper knife blade near
Logan.)

got tooth from Lester Adams.
Returned to Coal Valley.

Sept. 16 (2d) 1909

Packed, etc. in morning.
Left for Council Bluffs at
8:40 am.

Rode N. at 9:20 am.
At 8th st. & L Ave., S.E. of
intersection, is a great low
bank at bridge end.

Men say that there is a harder
white joint clay below.

Called this (1).

Next bridge above - (2)

Cut (3) is in side of bluff
& down is nearly level of
road there runs a
whitish compact layer (possibly
fossil remains) with many fossils.
At 6 ft. is a red band
6-8 in. strongly oxidized

running & it are vertical
nodules (see photo).

Above this layer is yellow
~~(orange)~~ but at first
a mass of blunder stuff (.
enveloping seepage from
above?) (see sample)

Cut 3 is about 250 yds. N.W.
angle in road.

The shingles are mostly
crushed, & it is noticeable
that the rock sample

Cut (4) is a small ledge,
fresh, cut, about 150 yds
N. 3 (3).

Cut (4) is a deep cut
(certainly ~~about~~ 55 ft.). It shows
no sand or gravel.

It is 100 yds long
with fossils, & sample of bone
about $\frac{35}{4}$ ft. below top
of bank. The bone part

lens is heavy, grayish, & shows laminae & water lines (whether formed after deposition?)

Oxidized streaks & patches appear on the lower part upmost at base - yellowish & there seem to be no sharp lines.

Most of the shells were taken from the shaly part, but I dug in & found several, & some others projecting from face. This seems to be in lower part only. The shells evidently came from the lower part Kanner. The source of slumping rocks clear. Part of 4th & 5th Coring E. of U. at end 4 & end 5 shows in back ground.

Cut (5) shows, especially at N. end, a lot of post Kanner gray lenses with horizontal streaks & cloudings & forms. Its other part is stain mostly for 4 or 5 ft, & forms extend through this as well. Above it the lens looks very compact, but upmost it becomes soft and yellow as shown in slumped areas.

It is about 20 ft to top of Post Kanner (of shale layers) from base of the back.

Bluff about 50 ft high & 100 yds long. It cuts along road to point where road & RR begin to diverge.

Cut 6 - is low down - its ^W base
about level with RR &
rises only 6-8 ft. It is
loamy, ^{fine} loam, heavy,
but ^{the} ^{soil} ^{is} ^{more} ^{loamy}
but ^{the} ^{soil} ^{is} ^{more}
my old alluvial deposit ^{to} ^{the} ^{old}
^{many} ^{inner} ^{rounds}
~~full~~ shells. See shells
& sample of clay.

at 7. there is a great
cut excavated in hill.

and a couple of
shiny good sized shrimps
run out. The
robbins, etc. in
little red S.
indicate that Alluvium
is not far.

Cut 8
About 200 yd N. is
a low cut which shows
a couple of feet of blue-
black sub alluvium on E.

side RR. Water runs out
all along here, & there are
small springs and streams
running with it.
Also all along at one point
shell bearing.
This cut is just W.
culvert 1075 (not ^{near} ^{near} ^{out})
(this is from N. 386)
Here above the culvert
there are streaks & layers
of gravel - evidently alluvium
& above that what appears
to be Kansan & post Kansan
loess. This part is rocky
& sloping slowly & with the
old shells, some broken,
& 1 mussel shell & was
found living.

Is this the way my alluvium
varies with time?
calcareous rocks are
plentiful.

A spring runs from several
higher points just N. of
cutout, showing that
my staff above Sublettia
probably slipped.

Cut 9 at the next cutout, about
200 yds N. the sublettia
rises at least 7 feet above
RK., & everywhere water
runs out from above it.

This is typical blue black
free Kansan, with scattered
pebbles & small boulders in
it. This is a fine exposure
of free Kansan - shows more
or less clearly for 100 yds
or more of little bits of boulders.
Look sample of free Kansan for
cut 9.

I could see sand pockets
above free Kansan.

This cut is about 50 yds
S. of switch tower 386
at the upper end of the
cut about 2 ft. of sand
(Cap) is above all
the free Kansan
water is
all along
the cut.

Top 118
Base 118
Cane.

Bottom

Bottom Indi

Free Kansan

Plants 15 & 16 early 83
along main bank
1032 would be ad measured.

Mr. Gandy

911 16th Street

A spring runs from somewhere higher point just N. of cutout, showing that my staff above Subaffine probably slipped.

Cut 9 at the next cutout, about 200 yds N. the subaffine rises at least 7 feet above R.R., & everywhere water runs out from above it.

This is typical blue-black pre-Kansas, with scattered pebbles & small boulders in it. This is a fine exposure of pre-Kansas - shows more or less clearly for 100 yds if one of both sides of valley. Took sample of pre-Kan from cut 9.

I could see some fossils above pre-Kansas

This cut is about 50 yds S. of switch tower 386 at the upper end of the cut about 2 ft. of sand (affine) appear above pre-Kansas, & water is running out all along. Photo 3 of 30 near the

Kansas bank

water side

pre-Kan

Photo 15 & 16 - looking SE along main bank
100' would be at mean cut

A hundred feet further
N. the alluvium gravels
form frequently conglomerates
the recent culvert
above, with bottom wash,
1070, has cut which
shows - alluvium gravel (with
water) & about that blue
Kiamichi, & then subfissile
(Laclede). - Cut 10

This is still quite a mass
S. of end of lake (Dove Lake)

This is really a whole chain
of exposures forming a series
10, 9, 8, etc. - all practically
continuous.

At 10 the subfissile
rises at least $12\frac{1}{4}$ ft
above RR & the
alluvium, both sand &
gravel, above is

(This makes it about 15-16 ft. 133
to bottom of gutter)

more or less conglomerated,
but water flows out everywhere
in some places Kiamichi
show distinctly above, in
others it is a sort of
Laclede. (slightly Laclede)

A little ways south - in N.
part of 10 - the subfissile
rises 12+ above RR then
a hard calcareous layer, 10 ft
thick, then more or less
conglomerate gravel about 7
ft., then conglomerate (sand &
gravel), about 5 ft. above
indistinct - but probably
Laclede. (see later photo with
Calvin & Meeker)

This kind of exposure extends
more than 50 yds, nearly
to culvert 1069.

Photos 7 & 8 - cut 11 -
lucky E. of N.

135

Crest Hill is just opposite
the mile post number CR
348 (Clinton.) It is 4 miles to C.B.
The emerald green boulders
conglomerates are 5-8 ft
in some places, & weather
to form tropolithic plates,
white veins and
talus.

~~Photos 19, 20~~

Conylomus

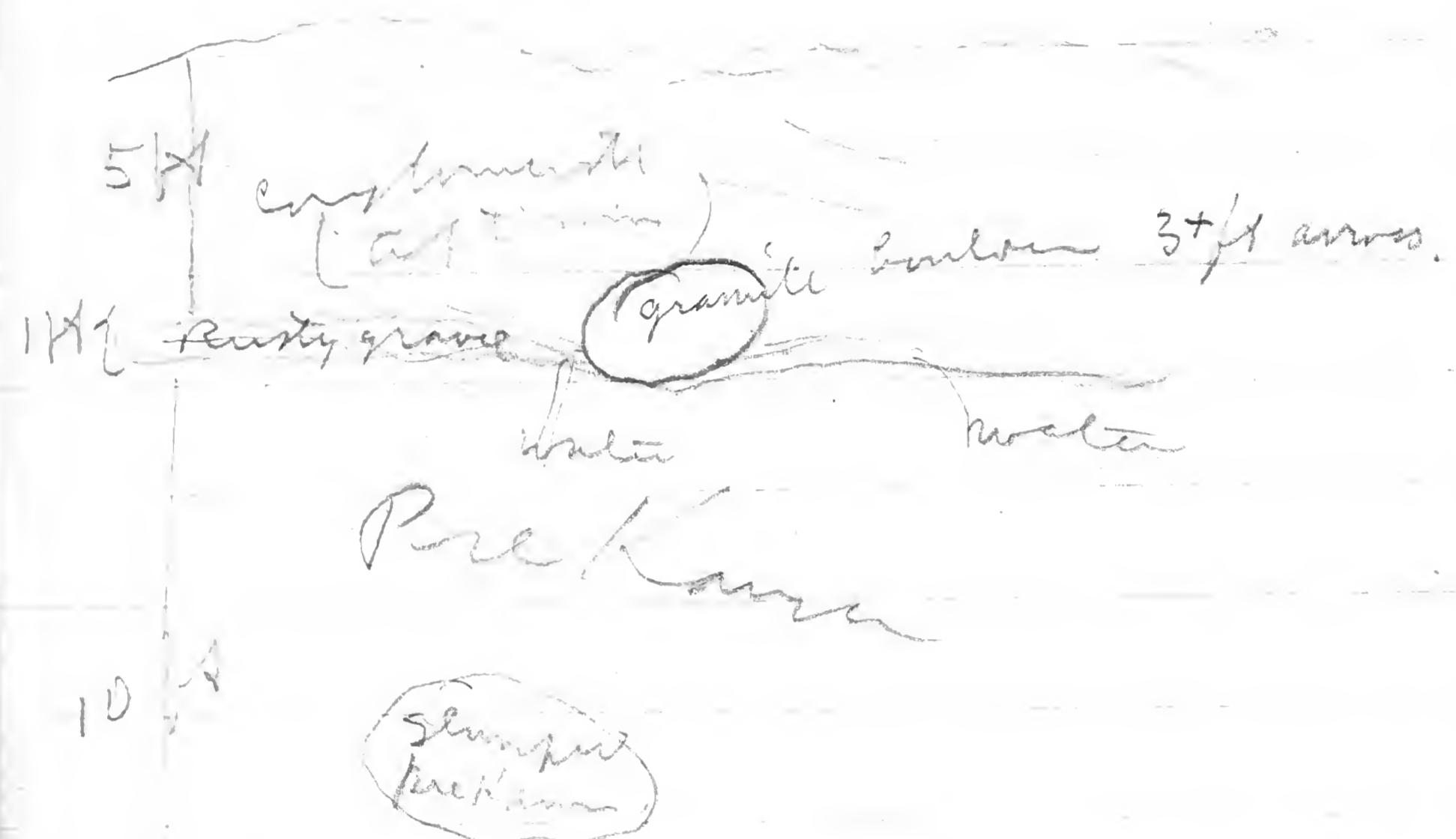
Walter

Burkman

Mr. R

Weakness
Losses
Mr.
beginning
of
action
early enough
lower laws
rule
P.R.T.

Photos 29 & 30 show N.
end, just above 4 mi. just
out 11, (part)



RR

Photos 29 & 30 show
some thick limestone
cement

At S. end the Guban
begins, bed of
shells, is 10-12 ft
thick, & over action

The outcrop here is very
distinct, - has a few boulders
& small boulders, nearly
all dark.

Just above about 1066 &
S. of switch town 384
(just between them) is
exposure 12, which is
similar to 11, shows cross-
bedded conglomerate, mostly
raw water, no cement
& all. -

Exposure 13 - is a small exposure
just N. of 12, shows abuton
conglomerate bed rising to north
(or dropping to south, rather)

Ex 14 - is at the great
pit ~~just~~ ^{just} above N. end of
town lake.

Here in cut back, 25 or
30 ft. of Lovelace's bed (+
new top of bank) raw of shells

show that loess begins, &
then rises back) —
below this is sand, probably
15 ft, then poorly bedded
clay.

Down on East of entrance
abut on slabs of
conglomerate, & in outer
bank west of RR. The
Pebkawan shows as
before.

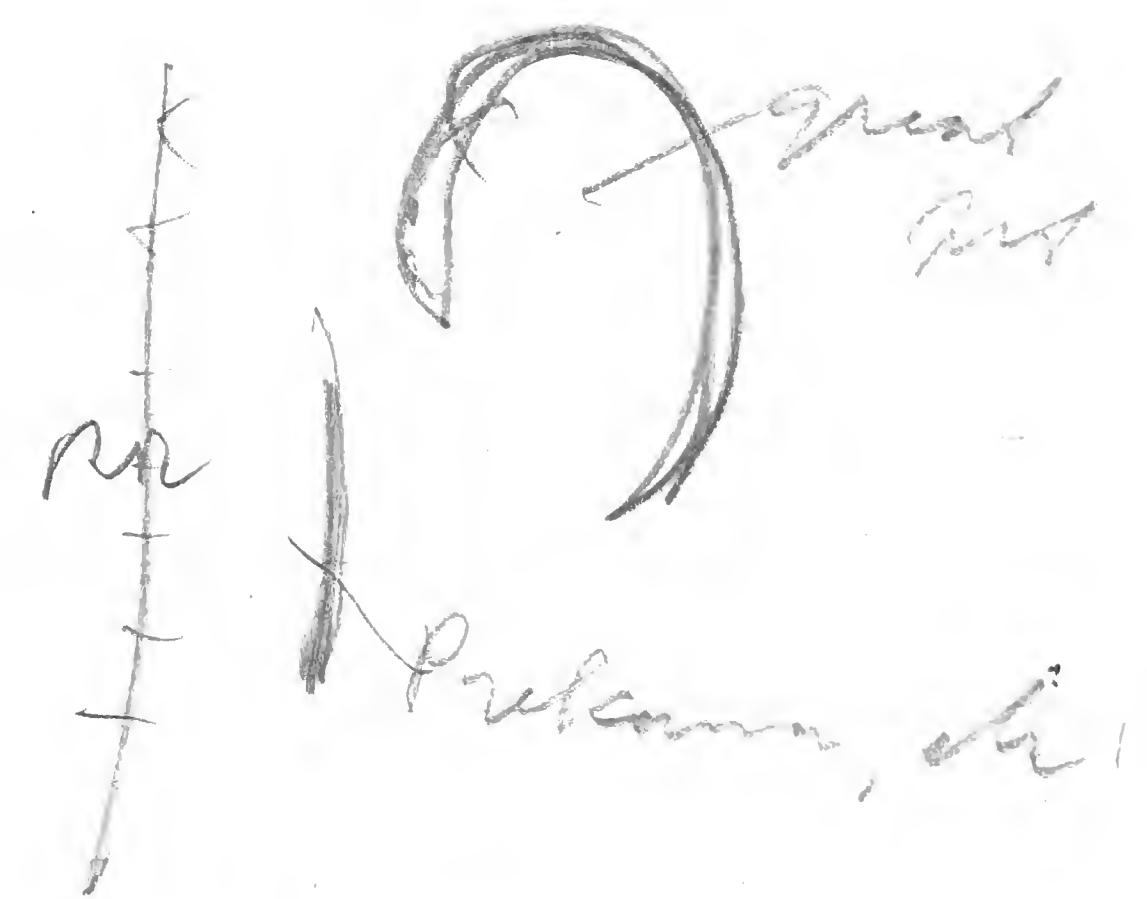
Plot 5 shows part of
inner bank

— low
moderate

moderate

valley mostly
over sand

Expos 14 should be just
S. of ⁿ end of lake - I have
pushed these up too far.
The afternoon is conglomerate
for 4-8 ft or more in
bank next to RR. The
fine sand in great part
is higher (12 ft)



Its N. end is just off
middle from D 393

It is about 1050 ft from great pit to culvert at ~~about~~ N. end of lake (upward point) are about 1100 ft to beginning of curve N. It is 500 ft more to about 1055.

all along the banks or rather a continuous cliff bluff N. of great pit to the 1500 ft. point (about 1055) there are occasional interruptions below of sub-astoria & astoria. The river a low river high.

Photo 6 - looking N at Bluff

Culvert 1054 is 500 feet on + 200 ft. farther N. the nice photographs in

Photo 6 begins.

This is at lower 384 looking N to 391 looking S.
(Two towns together.)

The big bluff continues for 1200 ft. It shows pre-Kanaw, at least 12 + 15 ft in places, & above it a belt of gravel & Kanaw above this with Kanaw up.

At 1200 is culvert 1052. The 1700 ft. point is 4 or 500 ft. above ground curve to E.

Sub-astoria shown at intervals all along. At 1700 there is a break then (from end of 1700) for 2000 ft more the bluffs are broken & interrupted & shrubby.

but they have few Kauri
& sprays all along.

This is well worn away,
at beginning of straight
stretch N., & is at
tower D, 371 (Loring S)

an elevation 1050.

Much a buried beach with
shells all along.

Then for 4800 to
tower 382 looking N or
tower 389 looking S (elevation
1053) the Bluff is an
escarpment, sometimes rocky,
sometimes sandy
sprayed & overgrown
but sprays slow &
occasionally (rarely)
submerged.

This must be near the top-
line.

at 2600 add to
above is the 1 mile

Yrs. Bluff broken &
overgrown

Add 400 = wash road rising

Add 1800 - there are
low outcroppings of white
limestone (Marlboro)

(The Crescent adds about
2600 +)

Saw one sand pit about
4¹/₂ miles below Honey Creek
& Loveland (from train) &
one about 1¹/₂ mi. S. of
Loveland.

Reaches Mo. Valley & ran
a couple of miles N.
along Bluff.

Packed in evening, and
retired late.

Sep. 17 - (Fri.) 1909

Left Mo. Valley at about
6⁺ AM. for Kansas.

Met Dr. H. E. Douglass
Ottawa, Ks.

Has feels. - 175 day of pregnancy.

Went to town & met

Mr. W. E. Babcock.

He has western tort,
& a lot of other bones, obtain
10-12 ft. below top of road,
in a gravelly layer
left at 10^t for Whiting.

Visited Coyne grave (old
Whiting homestead)

Found following plants

Prickly G. gone soft purple.

Some am. com, hawthorn,

Setaria pum., & espelun-

Saccharum.

Norris puber
Grassman

Vitis riparia

Xanthoxylum am
Cocculus —
Common.

Rubus minimum

also following:

Erythrina corynoides - very

Prenanthes - (blue) not com

Dragania - not rare.

Unclearosis - common.

Plantago - scattered.

Fragaria vesca - common

Erythronium - not rare

Gaultheria shallon - "

Actaea rubra - not com

(see p. 15)

Plants Q & R - Deep woods -

Coyne & others.

Photos Q & R, Whiting school.

Plants Q & R - Loring N. from coyne's

N. = soft maple.

E = Box elder

Photos 24 & 25 narrow shrubby
aspen line (left)

Photos 29 & 30 - walnuts on
N. side of road E. of
ambers S. of Cogins
4-8 in. diam.

Photos 25 & 26 - Lookout M.
On W. side is N. S. row of
walnuts. To east of row about
25 ft, then about 15 ft
bare, & then about
for 20 ft. corn is smaller,
growing taller, eastward. It
may also be wetter, flatter
here.

Corn N. of E. & W. row is
30 ft. N. of trunk &
crown exten 18 ft.
Corn scarcely smaller in
E. rows.

These walnuts are 6-10 in
diam & 60 or more ft. high

Photos 4 & 2 - looking E. along
road S. of Cogins.

Cottonwoods on south side
& walnuts on north. At
E. end of walnuts, extending
along their S. side is also
row of big cottonwoods.

Photos D & D - young walnut
grove (diam = 2½ - 4 in.)
S. of Cogins on E. side of
road. Too dense.

Photos 4 & D - looking E.
From same place as photo
S. of Cogins

On left - box & box
On right softwood.

Returned, took rubber &
left at 5:53 P.M. for
Cedar Rapids

Readers Cedar Rapids at about
2:05 A.M., & met John Hasty &

wife at depot. Her brother at Omaha died & they left at 4 am. Had quite a chat with John over convention affairs.

Left at 5 am for home.

Sep. 25, 1909 (Saturday)
Left Iowa City at 5:10 am
for Muscatine & Tipton, -
with L. A. Giddings.

We walked to E. & W. road just
N. of S. end of sand mound,
& collected plants on the
sandy flats in both
Muscatine & Louisa counties.

Traced county line exactly
this time, & found that all
that territory to fence just
N. of *Salix humilis*
slope, is in Louisa co.

This puts the blow-holes on
west-side (with boxelder, plum,
willows, etc., - all in
Louisa co.).

Also the great blow holes
on N.E. side, including
dunes with honey locust,
& area covered with

Zephronia which I had previously photographed. The fence near S. end of timber strip is ~~discontin~~ county line.

Took photo of melon patch. Also of prairie slope on W. side of sand mound.

The soil is everywhere bare sand, & at middle of slope small pebbles are not uncommon. Also saw bird shells (bleached) at several points, but near farm house, & it is possible children carried them here.

Found plants grouped in interesting manner.

Thus at S. end of W. slope Monarda fistulosa (now old) was very common; so was Solidago (scabrous) now

nearly though. Solidago rigida was quite common, & Panicum capillare, P. scribnerianum, & a fine "stipa like" grass were very common. Bromus oligostachys was not rare.

Northward, N. of farmhouse on N. slope & at top near N. edge Liatris scariosa was exceedingly common, mostly branched flowering. On old cultivation just on top Artemisia was exceedingly common - covers large area.

Liatris cylindrica, now though, was quite common. Both Solidago again very common.

Still farther N., toward County line, Monarda et again more common &

fewer Liatris & Solidago.

Graphalium polycalyx
is very common, - more
common in patches.

Zephronia, *Physostegia*, *Rhus*
trilobata, *Antennaria*
Plantaginifolia & more
rarely *Dioica*, *Budleia*
oligostachya, etc. now in
patches or families.

There are occasional clumps
of *Crassula*, *Selix lucida*
(northward toward co. line), &
some *Lactuca* (also clusely
northward).

Carex is everywhere
common.

Zephronia, *Tipa* like fine
grass, etc. predominate
N.E. toward flow holes.

Took photos of dunes
& honey locusts, tree

stunted by exposure.

Some *Lobelia cardinalis*
& some *syphilitic*, common
in timber sheltered
belt on N.E. side.
Took photos of *Ptelea*
trilobata at N. end
of sand mound.

Walked back to
Fossil Hill, (collected much
cotton in flower on
N.W. slope of sand
mound. Also *Solanum*
nigrum in timber belt.)
Took lunch in little lunch
room, and at 8:15 P.M.
left for Columbus, Ga.
At 10:28 for West Liberty
at 11:28 for Smyrna

65
 6
 5.6
 13
 44
 20

Feb. 10, 1910.

Hack, dove lig	.25
Browns, lantern	.25
RR to Cedar Rapids	.65
Dove " "	.25
RR. to Omaha, Ia.	5.66
Sleepers	.50
RR. to Sioux	.13 ⁺
Lunch 25 Supper 35 35	96
RR. to Mo. Valley	.91
Hotel Mo. Valley 50 check 10	.60
Plates 11	.50
RR to Co. Bluff 43 carbon 15	.58
Apple 10 Paper 5 Corn 10 milk punch	.25 .25
<u>[Trip to Sioux City]</u> 88, Lunch 45	1.33
<u>RR to Towner</u>	.88
<u>RR. to Bluff to Sioux City</u> 5.66	

Feb. 10, 1910

Started at 9:30 pm for C. Rapids
Took train (C. M. & St. P.) at C. R.
for Towner.

Feb. 11, 1910

Left just before midnight of the 10th
Arrived Towner at 7 am. &
after arranging for hanging
of curtain, left at about 11
am for Sioux City.

Reached Sioux City at 1 pm &
went to High Island.

Down Provincial Cole.
Also Mr. French, Mr. Beck.

Left for Towner early
morning of 11th March 9, 1910
Left at 5 pm for
Towner, which I reached at
6:32 pm.

Set up lantern & in time
in Remains of U.S. money
Spent night with Mr. Bisbee

who is Mr. Babcock's brother-in-law.
Met

Feb. 12, 1910.

157

N. J. Bristol -

Castana, la R. D. no. 1.
Wants pictures of Belvedere Beach
Counts a $\frac{1}{2}$ doz. sheep
wheat field.

Searched bones teeth from Babcock.

G. E. McMaster -

Liconic, la. -
Has hills, etc., within $\frac{1}{2}$
mi. away.

Talked to farmers in afternoon
on conservation.

Had taken trip into hills
Mo. & got a series of pictures.

Left at 4:55 P.M. for
Omaha, Met S. G. Oliver
& went to his father
Judge Addison Oliver,
an old settler.

Had a pleasant chat
with him,

Judge Addison Oliver
Planted 1500 bushels of
wheat -

Common labor 1890 (or
about 1890)

Planted in out over low
 $\frac{3}{4}$ mi. zone - In what
was forest of cotton,
maple, etc. Some green
ash. Native trout out
over by R.R. After
being out over much ash
came up.

Wheat trees were just 1/2
3 yrs. old. Fruits came
in from three tall
as man did not plant
only low ones. In early
90's.

also planted many kinds
of black locust, Robinia
pseudoacacia & catalpa. The

Bottom all ~~dry~~
out. Many black locust
are left - 6 in diam. &
40 ft. high. Most rapid
grower of hardier trees.
Trees which not cultivated,
black locust which
is blonde, is gone from
bottom and up - some left,
but slow growth where
not cultivated. But many
left. Some cottonwood below
and some fruiting well
in last 3 or 4 years. Some
6 in diam & 30-40 ft. high
Sec. 17 & 18 - in this strip
(Brown) -

Now covered with ash (young)
when he bought it.
People cut saplings for
fence posts & wood,

Soil is not light, - run off
it like gumbo
In drainage areas bottom
of river bottom on no sand.
And also on gravel.
Soil 6 in. to 16 in. in diam,
some less, some 8-58,
Name Brown -
Monona in Latin means
A man from Monona -
legislative - & its original
name.
No water power on river in
Monona.
6 in. to 12 in. deep on the
Brown soil has not sand
almost 50 acres - valuable
Lithium - also take
a lot of ash.
Also single rows - with
walnut - not well known
for. Fire sometimes.

In low places bare
Bushes out, not tall,
Then later in strips 5
yards wide, 4 & 5, 2 m's
long, then 3 strips E &
W, $\frac{1}{2}$ m' long, rather
Then 2 strips 5 yards wide
across section diagonally
all 5' of them
all walnuts -

Variety -
Then waterplanted with
nearly all of them, very
alternate rows with

Ramond willows -
Willows did better on
low land, - finely -
Willows have been cut
and several times for
temporary boats, few
wood (finest boats)

accidents - fires -
mostly Indian where burned.
Overflow of River has
done little harm. But
fragment of iron spring
of iron. Could raise
crop. Only 425 m since 1852
In March or April.
Flows probably caused by
meadows
Little River - out every
month in the year -
flooded mostly - In flood
in spring & summer
Maple flows even down
fast - 3 - 7 days -
Gives shade
Mr. Henry Harlow
Mayor of Duan
Artman well.

Visited Mr. Vincent
Lewis & Clark here

4 camps in Co. Aug. 8,
9, 10, 11, 1804 -

all in ruins.
3 still well marked -

History of the Expedition

under the command of -
Lewis and Clark

Elliott Coues'
in 4 vols.

Pub. by Francis P. Harper
1893

Camp Aug. 5 - Holes 66-67
no. I

" 6 " " p. 68

" 7 " " p. 69

Holes 68-69-70

" 9 - p. 70-71 -

" 10 - p. 71,

" 11 - p. 71 - 2

C. G. Oliver

Omaha, Ja

Work master at his house.
His wife is a sister of
Bernard Davis, my
pharmacist. They were
old settlers here.

Visited Parker Hollbrook at Library
The Library is in a fine
building, largely gift of
Judge Addison Oliver.

Left Omaha at 8³⁰ PM
& went to Niobrara Valley.
Bought box of plants at
Brown's & threw in.

Feb 13, 1910

Left for Co. Bluff &
7 AM. Called up
Mr. Raymond Wilson, & he
joined me with Mr. Webb,

the mammal training teacher
We went to So. Omaha.

So. Omaha
photo

29-30 - Loveland & car photo

snow today & big snow.

We went S. along CB&Q
R.R. as far as Oberman's
pic. This was badly
slumped & snow interbed.
Returned to Council Bluffs &
went to Fairmount Park
where I took a series of
pictures showing trees &
snow.

Then we walked north along
C. NW. RR to Aftonia
conglomerate. Took photos.
Watercress grew in springs
both here & at So. Omaha.

The first big snow with spring
above Council Bluffs belongs
to Co Opels.

Harry Cooper - 125 Fairmount
Co Bluffs.

low ground houses. White
to brown.

There are also houses in
the Council Bluffs High
School & Wilson's to
get information about
them.

Left Co. Bluff at 6:³⁰
P.M. for Iowa City

Missouri Valley - Feb. 12-1910

Attended New York Mining Train meeting at Sioux City yesterday & came back last night.

Met Mr. Wattles, & obtained profile.

Mr. Wattles showed me profiles. They show that Sioux has built up dikes.

He says the low ground at Sioux is 5-6 ft. lower than banks of Missouri.

Wattles went out with French at Sioux City - to golf club links at N. end of Pine, & (or Jackson?) street on low down dipping Cretaceous (Morans bed) half way up a slope on W. side of creek. There are boulders, pebbles, etc., & probably a sand pit on top of slope. Several yellow loam slopes in cut.

167
 $\frac{1}{2}$ mi apart

1 mi. S. of Mondamin, $\frac{1}{4}$ mile -
sample no. 52.7-50.8, 56.3, 61.3
60, 65.⁵ 54.⁰ 57.² 60.7 59.6 60.8
56.3, 57.9, 58.5 57.7 58.1
59.3 64.5, 64.0 62.3 59.9
60.2 (avg) 59.6 58.5 58.4
57.8, 52.5, 56.9 57.7, 57.9 63.0
58.9 (57.9)^{some}
^{top}
56.1, 55.7 55.5 54.
58.4, 65.5 (avg)

This is on a meander (though wide) just 1 mi S. of railroad line running through Mondamin.

Mr. Wattles called attention to the fact that when the river breaks over these dikes they blow large areas.

The RR. grade from Mo. Valley to near Miamis (before road is reached) is almost a dead level. This was surveyed by Mr. Wattles,

Stopped to see Mr. Chas.
Smith the brick man.
He says brick yard at
dunlap -

Woodbine - Canfield & Young
- Van Scy

Logan - Van Scy?

Montgomery - Chas Smith
home in Warren co.

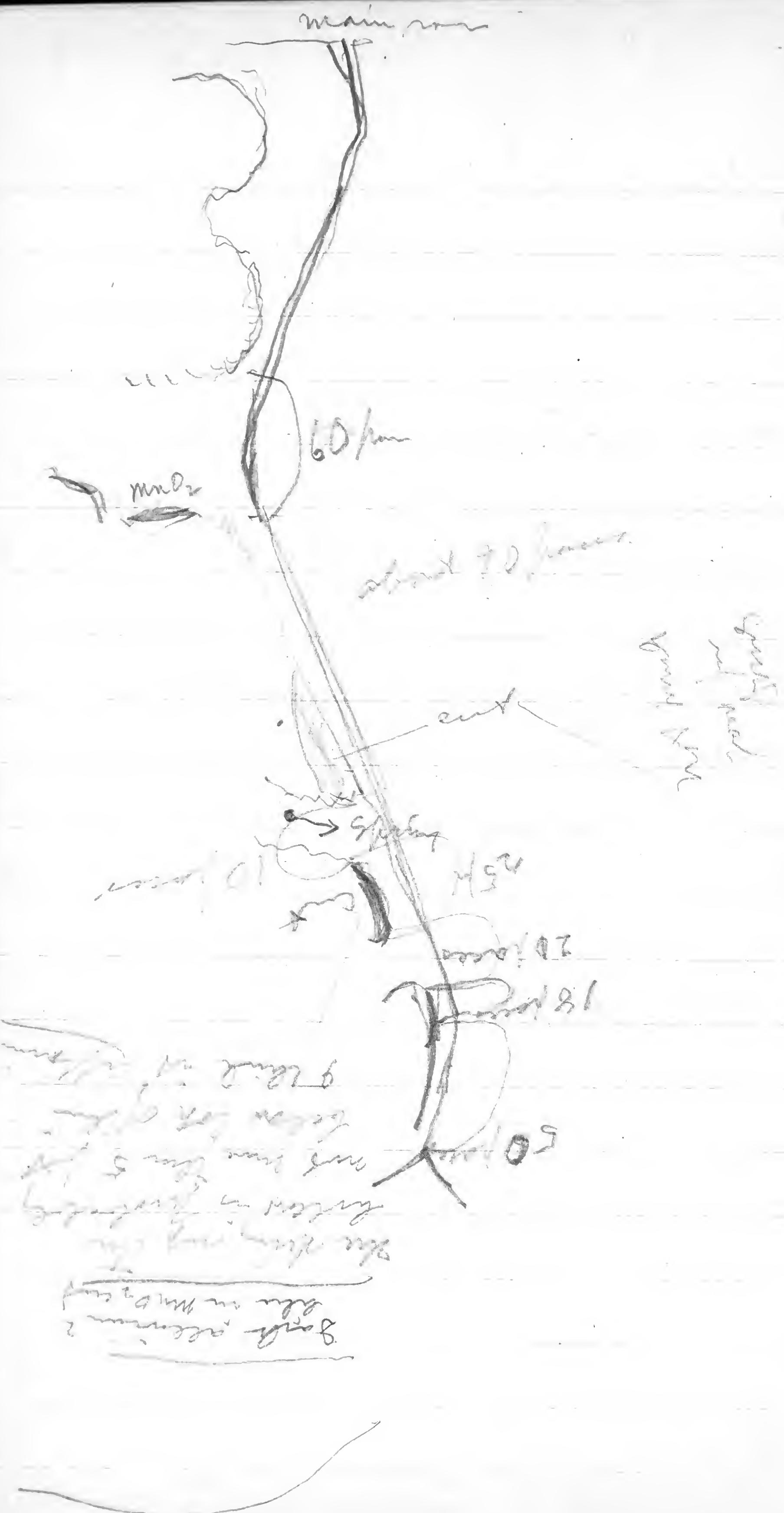
Has sales 10 to 12 hundred thousand
a year. Burned one last year.
Is more again burning.

I saw one, but he thinks cement
did not burn much.

In his lot - 90-100 ft. clay, of
that not more than 10 ft. post

Kanner. Then some Loveland
comes in 2 and 3 ft., but at
I don't know south much
more. (also north) & below
that about 90² ft. of Kanner
(I could see 10-12 ft.)

Then they strike sand (topsoil)
This is a forb bank.
The upper blue & yellow layer
Virginia Calcareous
At N. end of hill exposure
over black layer there are about
1-2¹/₂ ft. of dark brown silty
stuff with streaks (I am
quite sure this belongs with
Marl, & is very limy)
Above that, sharply cut off,
is a mass - 8 ft. + of
yellow stuff, brownish, but
hard, with a few streaks,
& it doesn't look just like
loess in texture, cleavage, etc.
The spring indicates that
Aftonian is not far away
Sugarcane is abundant &
common in somewhat open places
in sugar beet fields
There is a spring along Marl up from



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Nichols Bros - Cement works
Pan Valley

Vinegar is the other
concoction.

Book 12 photos - 4 (2 rows)
of hill with ravine and
Culavers, 4 rows (334 rows)
from top first above the
Smith's bridge, looking
up cliff, and 4 (2
different views) cut 66
the two ravines cut

Left for Lagon at 11⁵ AM.

Reached Logan at 2 P.M.
Mr. Peckham & Mr. McCabe
fr. were not in town.

A fine bright day.

J. E. Sprinkle (~~Sprinkle Bros~~)
N.W. Goodman -

Cement at Logan.

Sprinkle Bros -

Dunlap - no brickyard -

& even cement works given up
though stock on hand.

Went up to Chas R. Crows,
Farm that hills rise from
90 to 120 ft. above terrace.

I measure from NW. cor. of
Court House grounds, & from
rise of 5 ft. to foot of hill
1 block N., on road to Crows.
Then it is 90 ft. to top of
hill just beyond turn in road,
& the road then rises still
higher, & at Crows it is 120 ft.

The cedar log on Mr.
Locklin's place in gash
was down in blue clay about
40 ft. down in gash -
in S.E. 1/4 sec. 7 - in SW
or. of Braggolina trap.
Mr. Locklin says
there is now above the
blue clay in which
log was found.

Expenses - Sioux City trip

March 10- Fare to Cedar Rapids	.50
Cab ^{#5} - Fare to Sioux City	^{.641} 6.66
Sleekers ^{1.50} Postage ^{.25}	1.75.
March 11. Breakfast en route .50	
Dinner, Sioux City	.75
Lunch " "	.15
# Fare to Missouri Valley	1.
March 12. Hotel tuition -	1.50
Fare to Laramie -	.17
Fare to Cedar Rapids	4.
Fare to West Liberty	.73
Fare to Sioux City -	.32

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Accounts - Aug. 1909

189

Aug. 21. Orleans to Sibley 5.72
 Number Sibley .25
 Supper - Wm. W. 50

Aug. 22. Lodging 50
 RR. to Sioux City - 1.47
 Breakfast " " (restau) 1.30
 RR to Mo. Valley 1.52
 Hotel Union - ~~Sioux City~~ ^{Lodging} 1.00
 Orleans to Logan & return 1.50

Aug. 23. RR. to Cedar Rapids 4.84
 RR. to Sioux City .50
 Breakfast RR. relatives .30

Aug. 25. RR. to Iowa Rapids .50
 cab. .25
 RR. to Mo. Valley 4.89

Aug. 26. Breakfast - Wm. W. 1.50
 Express - 3 baskets 1.20
 Boarder at Logan .25
 RR. to Logan .17

Aug. 27. (Breakfast - Wm. W. 1.50)
 Lodging - Miller hotel .50
 Transfer (buses) .20

Aug. 27. Breakfast - Wm. W. 1.50
 Lunch - Wm. W. .40
 P.E. Robinson - Team & buggy 2.00
 Supper - Miller hotel .50
 Transfer - Wm. W. .15
 (RR. to Cedar Rapids 4.89
 Breakfast 25, RR. to Mo. Valley .50)
 W.M.R.R. to Carroll .20 1.42
 RR. to Mason City .60 2.38
 Dinner at McBride's 25
 Sep. 3. Supper McBride's 25
 " 3. Breakfast, dinner, supper 1.75
 " 4. Breakfast, Wm. W. 1.25
 Team - Wm. W. .50
 RR. to Sioux City 1.45 P. 3.38
 " Bicycle to Sioux 1.25
 Supper, Lumber 1.25
 " 4. Lodging Hotel Sioux 1.40
 " 5. Breakfast " " .35
 RR. to Akerson 1.18
 Wm. W. .25
 Room at C. H. Restaurant 1.30
 Sep. 5. (Supper .50 Lodging .50 New Leader 1.00)
 " 6. breakfast, dinner, supper .50 2.00
 " Lodging .50 .50
 Sep. 7. Breakfast 50 .50

Sep. 7 - RR. Chatworth, bike ¹³_{.25} .38
 RR. to Sioux City - 1.07
 Bike " " .25
 Lunch (num) .25
 Supper - West Hotel Cafe 1.55
 Room " " 1.00
 Sep. 8 - 2 day plates Zimmerman Bros. 1.00
 Breakfast - West Hotel
 sp. to Sargent's Bluff .35
 Lunch - Restaurant Sargent's Bluff .20
 Lunch " " " 1.25
 RR to Sioux City .15
 Room " " 1.00
 Sep. 9 - Breakfast - West Cafe .30
 Lunch for room - Frank's cafe .25
 Carfare Zimmerman & room .10
 Supper - West Cafe .50
 Room " " 1.00
 Sep. 10 - Breakfast .50 West cafe
 RR. to Mrs. Valley .1.52
 Bike .25
 Dinner Frank's Cafe (bakey) .20
 Supper working in Carfare .20
 Street car to University auto & return 10
 Bike to S. Sioux Cycles 10
 Hotel bill, Mrs. Valley room 1.50

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2 day plates, room, lodgin ^{1.20}
 Sep. 11 - Hotel bill - breakfast 1.00
 RR. to Co. Bluffs .43
 Carfare to Ogallala 10
 two lunches (num & supper) flavor 35
 Sep. 12 - carfare in Omaha - So Omaha 10
 Carfare to Co. Bluffs .15
 RR to Mrs. Valley .43
 Miller Hotel - room .50
 Sep. 13 " " breakfast .50
 RR to Logan .17
 Lunch - Helen's restaurant .25
 Team (Dr. Pendleton) 1.00
 RR to Mrs. Valley .17
 Room - Miller .50
 Sep. 14 - Breakfast, " .50
 Team C.E. Johnson 1.50
 Dinner " supper room .50 / .50 1.50
 Sep. 15 - Breakfast .50, working ³³_{.83}
 2 meals, sp to Logan ⁽²⁾ _{1.32}
 Labor, Litter Adams 5.00
 RR to Mrs. Valley .17
 Lodging .50
 1909 Team working room in
 Sep. 15. room, Supper 1.50

Mefford - 3½ mi S.E. f
Worthington - has opened
big sand bank.

Sept 16 Brubaker 50

Telegram to W.H. Babcock, Inc. .25

R.R. to Co. Bluff^g Bike .43

Bluff Co. Bluff^g Bike .25

R.R. Crescent to Melvin .29
Bike .25

Hotel .50

Sept 17 R.R. to Deacon's Inn .14
Bike .91

Bike .25

R.R. to Whiting, breakfast Inn .50

Livery Coleman-Wadey 1.50

Dinner - hotel - Whiting .15

Supper or such now .25

R.R. to Cedar Rapids 5.35

Bike .45

to Inn Aly .58

on Bike .62

7 - 3 - .55
8 - 6 - .345
9 - 6 - .36
5 - .50
= 10 - 6 - .395

Culavine is count

